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REPORT AND TRANSACTIONS
OF THE
DEVONSHIRE ASSOCIATION

FOR
THE ADVANCEMENT OF SCIENCE, LITERATURE,
AND ART.

[TAVISTOCK, JULY, 1889.]

VOL. XXI.

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1889.

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The Editor is requested by the Council to make it known to the Public, that the Committees and Authors alone are responsible for the facts and opinions contained in their respective Reports and Papers.

It is hoped that Members will be so good as to send to the Editor, the Rev. W. HARPLEY, Clayhanger Rectory, Tiverton, not later than 16th January, 1890, a list of any *errata* they may have detected in the present volume.

W. HARPLEY
CLAYHANGER RECTORY
TIVERTON

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RULES.

1. THE Association shall be styled the Devonshire Association for the advancement of Science, Literature, and Art.

2. The objects of the Association are—To give a stronger impulse and a more systematic direction to scientific enquiry in Devonshire; and to promote the intercourse of those who cultivate Science, Literature, or Art, in different parts of the county.

3. The Association shall consist of Members, Honorary Members, and Corresponding Members.

4. Every candidate for membership, on being nominated by a member to whom he is personally known, shall be admitted by the General Secretary, subject to the confirmation of the General Meeting of the Members.

5. Persons of eminence in Literature, Science, or Art, connected with the West of England, but not resident in Devonshire, may, at a General Meeting of the Members, be elected Honorary Members of the Association; and persons not resident in the county, who feel an interest in the Association, may be elected Corresponding Members.

6. Every *Member* shall pay an Annual Contribution of Half-a-guinea, or a Life Composition of Five Guineas.

7. Ladies only shall be admitted as Associates to an Annual Meeting, and shall pay the sum of Five Shillings each.

8. Every *Member* shall be entitled gratuitously to a lady's ticket.

9. The Association shall meet annually, at such a time in July and at such place as shall be decided on at the previous Annual Meeting.

10. A President, two or more Vice-Presidents, a General Treasurer, and one or more General Secretaries, shall be elected at each Annual Meeting.

11. The President shall not be eligible for re-election.

12. Each Annual Meeting shall appoint a local Treasurer and Secretary, who, with power to add to their number any Members of the Association, shall be a local Committee to assist in making such local arrangements as may be desirable.

13. In the intervals of the Annual Meetings, the affairs of the Association shall be managed by a Council, which shall consist exclusively of the following Members of the Association, excepting Honorary Members, and Corresponding Members :

(a) Those who fill, or have filled, or are elected to fill, the offices of President, General and Local Treasurers, General and Local Secretaries, and Secretaries of Committees appointed by the Council.

(b) Authors of papers which have been printed *in extenso* in the Transactions of the Association.

14. The Council shall hold a Meeting at Exeter in the month of January or February in each year, on such day as the General Secretary shall appoint, for the due management of the affairs of the Association, and the performing the duties of their office.

15. The General Secretary, or any four members of the Council, may call extraordinary meetings of their body, to be held at Exeter, for any purpose requiring their present determination, by notice under his or their hand or hands, addressed to every other member of the Council, at least ten clear days previously, specifying the purpose for which such extraordinary meeting is convened. No matter not so specified, and not incident thereto, shall be determined at any extraordinary meeting.

16. The General Treasurer and Secretary shall enter on their respective offices at the meeting at which they are elected ; but the President, Vice-Presidents, and Local Officers, not until the Annual Meeting next following.

17. With the exception of the Ex-Presidents only, every Councillor who has not attended any Meeting, or adjourned Meeting, of the Council during the period between the close of any Annual General Meeting of the Members and the close of the next but two such Annual General Meetings, shall have forfeited his place as a Councillor, but it shall be competent for him to recover it by a fresh qualification.

18. The Council shall have power to fill any Official vacancy which may occur in the intervals of the Annual Meetings.

19. The Annual Contributions shall be payable in advance, and shall be due in each year on the day of the Annual Meeting.

20. The Treasurer shall receive all sums of money due to the Association; he shall pay all accounts due by the Association after they shall have been examined and approved; and he shall report to each meeting of the Council the balance he has in hand, and the names of such members as shall be in arrear, with the sums due respectively by each.

21. Whenever a Member shall have been three months in arrear in the payment of his Annual Contributions, the Treasurer shall apply to him for the same.

22. Whenever, at an Annual Meeting, a Member shall be two years in arrear in the payment of his Annual Contributions, the Council may, at its discretion, erase his name from the list of members.

23. The General Secretary shall, at least one month before each Annual Meeting, inform each member by circular of the place and date of the Meeting.

24. Members who do not, on or before the day of the Annual Meeting, give notice, in writing or personally, to the General Secretary of their intention to withdraw from the Association, shall be regarded as members for the ensuing year.

25. The Association shall, within three months after each Annual Meeting, publish its Transactions, including the Rules, a Financial Statement, a List of the Members, the Report of the Council, the President's Address, and such Papers, in abstract or *in extenso*, read at the Annual Meeting, as shall be decided by the Council.

26. The Association shall have the right at its discretion of printing *in extenso* in its Transactions all papers read at the Annual Meeting. The Copyright of a paper read before any meeting of the Association, and the illustrations of the same which have been provided at his expense, shall remain the property of the Author; but he shall not be at liberty to print it, or allow it to be printed elsewhere, either *in extenso* or in abstract amounting to as much as one-half of the length of the paper, before the first of November next after the paper is read.

27. The Authors of papers printed in the Transactions shall, within seven days after the Transactions are published, receive twenty-five private copies free of expense, and shall be allowed to have any further number printed at their own expense. All arrangements as to such extra copies to be made by the Authors with the Printers to the Association.

28. If proofs of papers to be published in the Transactions be sent to Authors for correction, and are retained by them beyond four days for each sheet of proof, to be reckoned from the day marked thereon by the printers, but not including the time needful for transmission by post, such proofs shall be assumed to require no further correction.

29. Should the extra charges for small type, and types other than those known as Roman or Italic, and for the Author's corrections of the press, in any paper published in the Transactions, amount to a greater sum than in the proportion of ten shillings per sheet, such excess shall be borne by the Author himself, and not by the Association; and should any paper exceed four sheets, the cost beyond the cost of the four sheets shall be borne by the Author of the paper.

30. Every *Member* shall, within three months after each Annual Meeting, receive gratuitously a copy of the Transactions.

31. The Accounts of the Association shall be audited annually, by Auditors appointed at each Annual Meeting, but who shall not be *ex officio* Members of the Council.

BYE-LAWS AND STANDING ORDERS.

1. In the interests of the Association it is desirable that the President's Address in each year be printed previous to its delivery.

2. In the event of there being at an Annual Meeting more Papers than can be disposed of in one day, the reading of the residue shall be continued the day following.

3. The pagination of the Transactions shall be in Arabic numerals exclusively, and carried on consecutively, from the beginning to the end of each volume; and the Transactions of each year shall form a distinct and separate volume.

4. The General Secretary shall bring to each Annual Meeting of the Members a report of the number of copies in stock of each 'Part' of the Transactions, with the price per copy of each 'Part' specified; and such report shall be printed in the Transactions next after the Treasurer's financial statement.

5. The General Secretary shall prepare and bring to each Annual Meeting brief Obituary Notices of Members deceased during the previous year, and such notices shall be printed in the Transactions.

6. An amount not less than 80 per cent. of all Compositions received from existing Life-Members of the Association shall be applied in the purchase of National Stock, or such other security as the Council may deem equally satisfactory, in the names of three Trustees, to be elected by the Council.

7. At each of its Ordinary Meetings the Council shall deposit at interest, in such bank as they shall decide on, and in the names of the General Treasurer and General Secretary of the Association, all uninvested Compositions received from existing Life-Members, all uninvested prepaid Annual Subscriptions, and any part, or the whole, of the balance derived from other sources which may be in the Treasurer's hands after providing for all accounts passed for payment at the said Meeting.

8. The General Secretary, on learning at any time between the Meetings of the Council that the General Treasurer has a balance in hand of not less than Forty Pounds after paying all Accounts which the Council have ordered to be paid, shall direct that so much of the said balance as will leave Twenty Pounds in the Treasurer's hand be deposited at Interest at the Torquay Bank.

9. The General Secretary shall be authorized to spend any sum not exceeding *Ten Pounds* per annum in employing a clerk for such work as he finds necessary.

10. The General Secretary shall, within one month of the close of each Annual Meeting of the Association, send to each Member newly elected at the said Meeting a copy of the following letter :—

*Devonshire Association for the Advancement of Science, Literature,
and Art.*

SIR,—I have the pleasure of informing you that on the of July, , you were elected a Member of the Association on the nomination of .

The copy of the Transactions for the current year, which will be forwarded to you in due course, will contain the Laws of the Association. Meanwhile I beg to call your attention to the following statements :—

(1) Every Member pays an Annual Contribution of Half a Guinea, or a Life Composition of Five Guineas.

(2) The Annual Contributions are payable in advance, and are due in each year on the day of the Annual Meeting.

(3) Members who do not, on or before the day of the Annual Meeting, give notice in writing or personally to the General Secretary of their intention to withdraw from the Association are regarded as Members for the ensuing year.

The Treasurer's Address is—EDWARD VIVIAN, Esq., Woodfield, Torquay.—I remain, Sir, your faithful Servant,

Hon. Sec.

11. The reading of any Report or Paper shall not exceed twenty minutes, or such part of twenty minutes as shall be decided by the Council as soon as the Programme of Reports and Papers shall have been settled, and in any discussion which may arise no speaker shall be allowed to speak more than ten minutes.

12. Papers to be read to the Annual Meetings of the Association must strictly relate to Devonshire, and, as well as all Reports intended to be printed in the Transactions of the Association, and prepared by Committees appointed by the Council, must, together with all drawings intended to be used in illustrating them in the said Transactions, reach the General Secretary's residence not later

than the 24th day of June in each year. The General Secretary shall, not later than the 7th of the following July, return to the Authors all such Papers or drawings as he may decide to be unsuitable to be printed or to serve as illustrations in the said Transactions, and shall send the residue, together with the said Reports of Committees, to the Association's printers, who shall return the same so that they may reach the General Secretary's residence not later than on the 14th day of the said July, together with a statement of the number of pages each of them would occupy if printed in the said Transactions, as well as an estimate of the extra cost of the printing of such Tables, of any kind, as may form part of any of the said Papers and Reports; and the General Secretary shall lay the whole, as well as an estimate of the probable number of Annual Members of the Association for the year commencing on that day, before the first Council Meeting on the first day of the next ensuing Annual Meeting, when the Council shall select not a greater number of the Papers thus laid before them than will, with the other documents to be printed in the said Transactions, make as many sheets of printed matter as can be paid for with the sum of 60 per cent. of the subscriptions for the year of the said probable number of Annual Members, and any part or the whole of such balance, not derived from Compositions of existing Life Members, or from prepaid Annual Subscriptions, as may be lying at interest, as well as that which may be in the Treasurer's hands; this 'sum' shall be exclusive of the extra cost of the printing of such aforesaid Tables, which have been approved and accepted by the Council, provided the aggregate of the said extra cost do not exceed 6 per cent. of the said subscriptions; exclusive also of the printers' charge for corrections of the press; and also exclusive of the cost of printing an Index, a list of Errata, and such Resolutions passed at the next Winter Meeting of the Council, as may be directed to be so printed by the said Winter Meeting; and the number of Papers selected by the Council shall not be greater than will, with the Reports of Committees, make a Total of 40 Reports and Papers.

13. Papers communicated by Members for Non-Members, and accepted by the Council, shall be placed in the Programme below those furnished by Members themselves.

14. Papers which have been accepted by the Council cannot be withdrawn without the consent of the Council.

15. The Council will do their best so to arrange Papers for reading as to suit the convenience of the authors; but the place of a Paper cannot be altered after the Programme has been settled by the Council.

16. Papers which have already been printed *in extenso* cannot be accepted unless they form part of the literature of a question on which the Council has requested a Member or Committee to prepare a report.

17. Every meeting of the Council shall be convened by Circular, sent by the General Secretary to each Member of the Council not less than ten days before the Meeting is held.

18. All Papers read to the Association which the Council shall decide to print *in extenso* in the Transactions, shall be sent to the printers, together with all drawings required in illustrating them, on the day next following the close of the Annual Meeting at which they were read.

19. All Papers read to the Association which the Council shall decide not to print *in extenso* in the Transactions, shall be returned to the authors not later than the day next following the close of the Annual Meeting at which they were read; and abstracts of such Papers to be printed in the Transactions shall not exceed one-fourth of the length of the Paper itself, and must be sent to the General Secretary on or before the seventh day after the close of the Annual Meeting.

20. The Author of every Paper which the Council at any Annual Meeting shall decide to print in the Transactions shall be expected to pay for all such illustrations as in his judgment the said Paper may require.

21. The printers shall do their utmost to print the Papers in the Transactions in the order in which they were read, and shall return every Manuscript to the author as soon as it is in type, *but not before*. They shall be returned *intact*, provided they are written on loose sheets and on one side of the paper only.

22. Excepting mere verbal alterations, no Paper which has been read to the Association shall be added to without the written approval and consent of the General Secretary; and no additions shall be made except in the form of notes or postscripts, or both.

23. In the intervals of the Annual Meetings, all Meetings of the Council shall be held at Exeter, unless some other place shall have been decided on at the previous Council Meeting.

24. When the number of copies on hand of any "Part" of the Transactions is reduced to twenty, the price per copy shall be

increased 25 per cent. ; and when the number has been reduced to ten copies, the price shall be increased 50 per cent. on the original price.

25. The Association's Printers, but no other person, may reprint any Committee's Report printed in the Transactions of the Association, for any person, whether a Member of the said Committee, or of the Association, or neither, on receiving, in each case, a written permission to do so from the Honorary Secretary of the Association, but not otherwise; that the said printer shall pay to the said Secretary, for the Association, sixpence for every fifty Copies of each half sheet of eight pages of which the said Report consists; that any number of copies less than fifty, or between two exact multiples of fifty, shall be regarded as fifty; and any number of pages less than eight, or between two exact multiples of eight, shall be regarded as eight; that each copy of such Reprints shall have on its first page the words "Reprinted from the Transactions of the Devonshire Association for the Advancement of Science, Literature, and Art for — with the consent of the Council of the Association," followed by the date of the year in which the said Report was printed in the said Transactions, but that, with the exception of printer's errors and changes in the pagination which may be necessary or desirable, the said Reprint shall be in every other respect an exact copy of the said Report as printed in the said Transactions without addition, or abridgment, or modification of any kind.

26. The General Secretary shall, within one month after each Annual General Meeting, inform the Hon. Local Treasurer and the Hon. Local Secretary, elected at the said Meeting, that, in making or sanctioning arrangements for the next Annual General Meeting, it is eminently desirable that they avoid and discourage everything calculated to diminish the attendance at the General and Council Meetings, or to disturb the said Meetings in any way.

27. The Bye-Laws and Standing Orders shall be printed after the "Rules" in the Transactions.

28. All resolutions appointing Committees for special service for the Association shall be printed in the Transactions next before the President's Address.

29. Members and Ladies holding Ladies' Tickets intending to dine at the Association Dinner shall be requested to send their names to the Hon. Local Secretary on forms which shall be provided; no other person shall be admitted to the dinner, and no names shall be received after the Monday next before the dinner.

30. Members admitted by the General Secretary during the interval between two Annual General Meetings, and who decide when admitted to compound for the Annual Contributions, shall be entitled to receive the publications of the Association during the Association's year then current, provided their compositions are paid not later than the last day of January, but shall not be thus entitled if their compositions are paid between that date and the next Annual General Meeting of the Association.

REPORT OF THE COUNCIL.

As presented to the General Meeting, Tavistock, July 30th, 1889.

THE Twenty-seventh Annual Meeting was held in Exeter on Tuesday, July 24th, and following days. It had been arranged that the entire series of meetings should take place at the Albert Memorial Museum, where reception-rooms and various offices were provided, and the whole building was open to Members. The Council met at 2 p.m., and transacted the usual formal business.

At 4 p.m. the Members and Associates, who mustered in large numbers, were received at the Guildhall by the Mayor (Mr. C. T. K. Roberts), the Sheriff (Dr. Davy), magistrates, and members of the Exeter City Council. The Mayor, in welcoming the Association, alluded to the fact that this was the third occasion on which the Association had met in the ancient city, the first Annual Meeting having been held there in 1862, under the Presidency of their late distinguished citizen Sir John Bowring; and the second visit having been made ten years later, in 1872, when the Right Rev. the Lord Bishop of the Diocese (Dr. Temple) presided over the deliberations of the Association. He assured the members that the welcome given to them on the present occasion was no less hearty than on the former visits, and expressed a hope that the meeting might be as pleasant, successful, and instructive as its predecessors. The Sheriff cordially joined in the Mayor's welcome. In the absence of the President, Sir J. B. Phear, as senior Vice-President present, thanked the Mayor and Corporation for their cordial welcome. After the reception the general meeting was held, at 4.30 p.m., in the Museum.

Subsequently there was a well-attended reception of members at the Bishop's Palace by the Dean, in the absence of the Bishop. The Dean took the visitors over the Palace grounds, and afterwards over the Deanery, pointing out several objects of especial interest to Members. Tea was served at the Deanery.

In the evening, at 8 p.m., the President, the Very Rev.

Dean Cowie, delivered his Introductory Address to a large audience assembled in the Art Gallery of the Museum.

On Wednesday, at 11 a.m., the reading and discussion of the following Programme of Reports and Papers was commenced, and continued until 4 p.m. :

Thirteenth Report of the Committee on Scientific Memoranda	<i>J. Brooking Rowe, F.S.A., F.G.S.</i>
Tenth Report of the Committee on Barrows	<i>R. N. Worth, F.G.S.</i>
Report on the Harding Collection of Manuscripts, Records, and Historical, Ecclesiastical, Heraldic, and Antiquarian Documents and Notes relating to Devon and Cornwall	<i>J. R. Chanter.</i>
Glimpses of Elizabethan Households	<i>W. Cotton, F.S.A.</i>
Sir Henry Rosewell—a Devon Worthly	<i>Miss James.</i>
Some Notes on the Well at the Exeter City Asylum	<i>T. Andrew, F.G.S.</i>
Traces of Roman Occupation near Plymouth	<i>R. N. Worth, F.G.S.</i>
The Granite of Dartmoor. Part I.	<i>W. A. E. Ussher, F.G.S.</i>
The Granite of Dartmoor. Part II.	<i>W. A. E. Ussher, F.G.S.</i>
Some Devon Monoliths	<i>Rev. S. Baring-Gould, M.A.</i>
Andrew Brice and the Early Exeter Newspaper Press	<i>T. N. Brushfield, M.A.</i>
On the Metamorphic and Associated Rocks of the Extreme South of Devonshire	<i>Alex. Somervail.</i>
The Raised Beach on the Thatcher Rock: its Shells and their Teaching	<i>A. R. Hunt, F.G.S., F.L.S.</i>
The Customs of the Manor Courts of Braunton	<i>R. Dymond, F.S.A.</i>
The Slannings of Legh, Bickleigh, and Maristow	<i>Winslow Jones.</i>
The Ashwater of William of Worcester	<i>H. B. S. Woodhouse.</i>
On a Controversy Touching Ship Money in the Reign of James I.	<i>R. N. Worth, F.G.S.</i>
Fauna of Devon—Phytophagous Hymenoptera	<i>E. Parfitt.</i>
Christmas with Bishop Grandison	<i>Very Rev. Canon Brownlow, M.A.</i>
Science and Art in Devonshire Villages	<i>J. Phillips.</i>
A Gold Washing Apparatus	<i>Rev. S. Baring-Gould, M.A.</i>
Some Notes on a Natural Pipe from a Sand Pit in the Breccia Series in the Parish of Heavitree	<i>T. Andrew, F.G.S.</i>
Cluniac Houses in Devon: a Visitation of the Province in 1279	<i>J. R. Chanter.</i>
Notes on Deep Borings at the Waterworks, and in the Trias at Teignmouth, Devon	<i>G. Wareing Ormerod, M.A., F.G.S.</i>
Thomas Chafe, of Doddlescott, in St. Giles-in-the-Wood, Brother-in-law of Tristram Risdon, the Antiquary	<i>Winslow Jones.</i>
Who Wrote the Exmoor Scolding and Courtship?	<i>T. N. Brushfield, M.D.</i>
The Limestones of the Plymouth District	<i>R. N. Worth, F.G.S.</i>

After the conclusion of the reading of papers for the day, the Sheriff of Exeter (Dr. Davy) and Mrs. Davy held a reception at Southernhay House, where, in spite of the weather, which was somewhat unfavourable, a large number assembled. To all who were present the Sheriff and Mrs. Davy extended the most liberal hospitality, and the pleasures of the attractive grounds which are attached to the house were fully enjoyed. During the time the guests were within the grounds the band of the 4th Battalion Devonshire Regiment agreeably rendered a very attractive programme of music.

In the evening, at 8 p.m., the Annual Dinner was held at the Rougemont Hotel. The chair was occupied by the President, the Very Rev. the Dean of Exeter, and nearly a hundred Members and Associates were present.

On Thursday, at 10 a.m., the reading and discussion of Papers was resumed and continued until 3 p.m., when the concluding general meeting was held, followed by a meeting of the Council. Shortly after the members of the Association, under the guidance of the Reception Committee and others, inspected the various objects of interest in Exeter, including the Cathedral and the Rougemont Castle grounds, and the inspection of these and other places fully occupied the members during the remainder of daylight. In the evening there was a brilliant reception of the Members of the Association by the Right Worshipful the Mayor of Exeter and Mrs. C. T. K. Roberts at a *conversazione* at the Museum. The reception was in every respect most successful, and host and hostess were alike congratulated on the pleasure which their kindly efforts had given to all whose privilege it was to be present.

Friday as usual was devoted to excursions. Unfortunately the weather was unpropitious in the extreme, rain falling almost incessantly throughout the day. Nevertheless, a considerable number of members of the Association—hoping, perhaps, almost against hope, for better things—in defiance of the elements embarked on one or other of the journeys which had been mapped out and bravely accomplished, at least a portion of it. Three excursions were organized, and all from the Albert Memorial Museum. One was to Woodbury (Raleigh's birthplace), Bickton, East Budleigh, Budleigh Salterton, and objects of interest on the route, returning by way of Marley; a second over Haldon to Chudleigh Rocks, returning by Powderham; and a third to Dunsford Bridge, Fingle Bridge, and the Cromlech at Drewsteignton.

It having been decided that the next Annual Meeting should be held at Tavistock, the following were elected officers for the occasion :

President: W. H. Hudleston, Esq., M.A., F.R.S., F.G.S., F.L.S., F.C.S. Vice-Presidents: Very Rev. B. Cowie, D.D., Dean of Exeter; Rev. D. P. Alford, M.A.; Rev. L. T. Badcock; Rev. S. Baring-Gould, M.A.; W. H. Chichester, Esq., J.P.; W. F. Collier, Esq., J.P.; Rev. W. H. David, M.A.; Viscount Ebrington, M.P.; Reginald B. E. Gill, Esq., J.P.; W. S. Gervis, M.D., F.G.S.; D. Radford, Esq., J.P.; Lord Arthur Russell; Rev. E. Spencer; M.A., B. ès L.; Rev. H. Fox Strangways, M.A. Hon. Treasurer: E. Vivian Esq., M.A. J.P., *Torquay*. Hon. Local Treasurer: Reginald Morshead, Esq., J.P., *Tavistock Bank*. Hon Secretary: Rev. W. Harpley, M.A., F.C.P.S., *Clayhanger, Tiverton*. Hon. Local Secretary: T. W. Greenfield, Esq., *Tavistock*.

The Council have published the President's Address, together with Obituary Notices of members deceased during the preceding year, and the Reports and Papers read before the Association; also the Treasurer's Report, a List of Members, and the Rules, Standing Orders, and Bye-Laws; they have since added an Index, kindly prepared by Mr. P. O. Hutchinson, and a Table of Corrections.

A copy of the *Transactions* and Index has been sent to each member, and to the following Societies: The Royal Society, Linneæan Society, Geological Society, Anthropological Institute of Great Britain and Ireland, Royal Institution (Albemarle Street), the Society of Antiquaries, Devon and Exeter Institution (Exeter), Plymouth Institution, Torquay Natural History Society, Barnstaple Literary and Scientific Institution, Royal Institution of Cornwall (Truro), the Library of the British Museum, The British Museum (Natural History), the Bodleian Library (Oxford), and the University Library (Cambridge).

With the volume of *Transactions* was also published and issued to members Part V. of Devonshire *Domesday Book*.

STATEMENT OF THE PROPERTY OF THE ASSOCIATION,

July 30th, 1889.

Funded Property, Consols	.	.	£	s.	d.
Arrears of Annual Contributions (valued at)	.	.	8	8	0
"Transactions" in Stock, 1863 ... 75 copies at	2s. 0d.	.	7	10	0
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Index to do. (extra copies), 1884 ... 49 "	0s. 6d.	.	1	4	6
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(Signed) W. HARPLEY, Hon. Secretary.					

"When the number of copies on hand of any 'Part' of the Transactions is reduced to twenty, the price per copy shall be increased 25 per cent.; and when the number has been reduced to ten copies, the price shall be increased 50 per cent. on the original price."—*Standing Order, No. 24.*

The "Transactions" in stock are insured against fire in the sum of £200. The vols. published in 1862, 1869, and 1872 are out of print.

SELECTED MINUTES OF COUNCIL, APPOINTING COMMITTEES.

Passed at the Meeting at Tavistock,

JULY, 1889.

8. That Rev. Professor Chapman, Rev. W. Harpley, Sir J. B. Phear, Mr. J. Brooking Rowe, and Very Rev. Dean Cowie be a Committee for the purpose of considering at what place the Association shall hold its Meeting in 1891, who shall be invited to be the Officers during the year beginning with that Meeting, and who shall be invited to fill any official vacancy or vacancies which may occur before the Annual Meeting in 1890; that Mr. Harpley be the Secretary; and that they be requested to report to the next Winter Meeting of the Council, and, if necessary, to the first Meeting of the Council to be held in July, 1890.

9. That Mr. F. Brent, Mr. T. R. A. Briggs, Mr. George Doe, Rev. W. Harpley, Mr. H. S. Gill, Mr. E. Parfitt, Mr. J. Brooking Rowe, and Mr. R. N. Worth be a Committee for the purpose of noting the discovery or occurrence of such Facts in any department of scientific inquiry, and connected with Devonshire, as it may be desirable to place on permanent record, but which may not be of sufficient importance in themselves to form the subjects of separate papers; and that Mr. J. Brooking Rowe be the Secretary.

10. That Mr. P. F. S. Amery, Mr. George Doe, Rev. W. Harpley, Mr. P. Q. Karkeek, Mr. J. Brooking Rowe, and Mr. H. B. Woodhouse, be a Committee for the purpose of collecting notes on Devonshire Folk-Lore; and that Mr. George Doe be the Secretary.

11. That Mr. R. W. Cotton, Mr. P. Q. Karkeek, Sir J. H. Kennaway, Mr. E. Windeatt, and Mr. R. N. Worth be a Committee for the purpose of compiling a list of deceased Devonshire Celebrities, as well as an Index of the entire Bibliography having reference to them; and that Mr. R. W. Cotton be the Secretary.

12. That Dr. Brushfield, Lord Clifford, Mr. A. H. A. Hamilton, Mr. G. Pycroft, Mr. J. Shelly, and Mr. R. N. Worth be a Committee to prepare a Report on the Public and Private Collections of Works of Art in Devonshire; and that Mr. J. Shelly be the Secretary.

13. That Mr. J. S. Amery, Dr. Brushfield, Mr. G. Doe, Mr. F. T. Elworthy, Mr. F. H. Firth, Mr. P. O. Hutchinson, Mr. P. Q. Karkeek, and Dr. W. C. Lake be a Committee for the purpose of noting and recording the existing use of any Verbal Provincialisms in Devonshire, in either written or spoken language; and that Mr. F. T. Elworthy be the Secretary.

14. That Mr. J. S. Amery, Mr. G. Doe, Rev. W. Harpley, Mr. P. O. Hutchinson, Sir John B. Phear, Mr. J. Brooking Rowe, and Mr. R. N. Worth be a Committee for editing and annotating such parts of *Domesday Book* as relate to Devonshire; and that Mr. J. Brooking Rowe be the Secretary.

15. That Mr. P. F. S. Amery, Mr. G. Doe, Mr. P. O. Hutchinson, Mr. E. Parfitt, Mr. J. Brooking Rowe, and Mr. R. N. Worth be a Committee to collect and record facts relating to Barrows in Devonshire, and to take steps, where possible, for their investigation; and that Mr. R. N. Worth be the Secretary.

16. That Mr. F. H. Firth, Mr. J. B. Hamling, Rev. W. Harpley, Mr. E. Parfitt, Mr. R. C. Tucker, and Mr. R. W. Cotton be a Committee for the purpose of making the arrangements for the Association dinner at Barnstaple in 1890; and that Mr. R. C. Tucker be the Secretary.

17. That Mr. E. E. Glyde, Mr. James Hamlyn, Mr. E. Parfitt, and Mr. P. F. S. Amery be a Committee to collect and tabulate trustworthy and comparable observations on the climate of Devon; and that Mr. E. E. Glyde be the Secretary.

18. That the Very Rev. Canon Brownlow, Dr. Brushfield, Mr. J. R. Chanter, Mr. R. W. Cotton, The Very Rev. the Dean of Exeter, Rev. J. Ingle Dredge, Mr. J. Brooking Rowe, Mr. E. Windeatt, and Mr. R. N. Worth be a Committee for the purpose of investigating and reporting on any collections of Manuscripts, Records, or Ancient Documents existing in, or relating to, Devonshire, with the nature of their contents, their locality, and whether in public or private hands; and that Mr. J. R. Chanter be the Secretary.

PRESIDENT'S ADDRESS.

LADIES AND GENTLEMEN,—In venturing to offer some remarks by way of an address to the Members of the Devonshire Association, the facts of the case require that I should, in the first instance, consider what chain of circumstances has caused me to be occupying this chair at the present moment. It has been said that few counties in England can lay such a claim to the affections of their inhabitants as the great shire of the South-west. My only claim to any connection with this county arises from the fact that I have spent many happy days here in times gone by, and have thus been able to obtain some little insight into the nature of the country. Since that period also I have paid a certain amount of attention to geological matters. It is probably this latter circumstance which influenced the Council in electing me to fill the Presidential chair.

There remains then the question, What is to be the subject of the Address which your President is expected to give? Reverting to my presumed title to occupy this chair, if it is not based on geological grounds, I can conceive of none other. Acting on that supposition, I would propose for our consideration on the present occasion some points in the ancient physical history of the south-western extremity of England, with more especial reference to the country round Dartmoor. Tavistock may be said to occupy a central position with regard to this region, which extends from Exmoor to the Land's End, and is sometimes known as the Damnonian peninsula.

The bill of fare which your Association offers to its members is so varied and extensive that few persons would venture to grapple with the entire *menu*; although, strictly speaking, a president ought to pass in review all the topics handled by the Association over which he presides. But

owing to the subdivision of labour, especially in Science, it is becoming more difficult every year to find men who can properly cover the whole ground in a general address. There used to be persons who were able to throw their hands lightly over all the sciences. Men of this stamp were invaluable, but they are getting scarce, and possibly the race may in time become altogether extinct.

Unfortunately, geological subjects are not very inviting to a general audience, and one feels the difficulty of steering between the Scylla of merely popular remarks, and the Charybdis of technical disquisition. For some minds it is a relief to turn away from the too often vexatious questions of the present to the contemplation of a past, which is so old that it ought to awaken no animosities. And yet I cannot help feeling that this must be regarded as only a qualified recommendation. Ancient physical histories may seem but namby-pamby food to the descendants of a generation which was in the habit of converting the geological meeting-room into an arena where the Deluge, the Antiquity of Man, the Creation of Species, and other exciting topics were discussed with ardour by some of the best speakers of the day. That was a period when men's minds were undergoing a great revolution. For good or for evil, the study of geology, and especially of that branch known as palæontology, has completely changed our views. We are now no longer polemical, except on points of an abstract nature, and some people might charge us with being dull.

And yet there can be no doubt, if we may judge from the numerous important papers bearing on geological questions which have appeared lately, that local geology has had plenty of expositors. And here let me express my admiration for that most excellent work known as the *Transactions of the Devonshire Association*. I venture to think that few counties possess such a valuable record of matters connected with Science, Literature, and Art. Kingsley, in his Presidential Address, leaves us under the impression that when De la Beche and Phillips, some fifty years ago, laid the foundation of our knowledge of the Devonian rocks, their visits were passed by unnoticed, or, if noticed at all, were regarded in the light of absurdities. What a change has been wrought since then in a county which can boast of the contributions of Pengelly, Ormerod, Vicary, Townshend Hall, Parfitt, Worth, Hunt, Champernowne, Downes, and Whidborne, towards the solution of the numerous problems of the day! In addition to these there have been communications from

other writers indirectly connected with the county. Mr. Ussher's papers are especially valuable, and lately Mr. Somervail has proved his appreciation of the geology of the district. Not that I should wish in the least, by omitting their names, to imply that other authors have not equally distinguished themselves. Nothing can be more interesting than many of the papers that have appeared on such subjects as Folklore, Local History, Verbal Provincialisms, Archæology, &c. These are subjects of particular interest in county records, and Devonshire is especially to be congratulated on the fulness of many of the Reports bearing upon these subjects, though we are not all perhaps prepared to aver, with one enthusiast, that the dialect of Devon is the true classic English.

There is just one other topic to which I would direct your attention before proceeding with the main subject of the Address; viz., the advantages likely to arise from the completion of the Laboratory of the Marine Biological Association at Plymouth. Prior to the completion of the Laboratory, as we are informed by the Director, it was impossible for the naturalists of the Association to do any great amount of scientific work. Much information on fishery matters, and on the local Fauna and Flora, had, however, been collected and tabulated. A memoir on the development of bony fishes, and a work on the "Crustacea of the Sound," are amongst the results of this early period; and as the organization becomes more perfect, we may feel sure that additional results will be forthcoming. The Director further remarks that, in order to obtain a thorough knowledge of the Fauna and Flora of the Devonshire and Cornish coasts, it is requisite that several naturalists should spend long periods in investigating the different groups of the animal and vegetable kingdoms. Here is a chance for the naturalists of the Devonshire Association.

The Director further comments on the changes which have taken place in the fauna of Plymouth Sound during the last twenty years. Many animals have migrated further out, and are no longer to be found within the Breakwater. This, he says, is due to the great increase of the Three Towns, and to the largely-increased outfall of sewage, which in many places produces a ground so foul that very few animals would have a chance of subsisting there.

I have given some prominence to the work of the Marine Biological Association, because this line of observation is more likely to be productive of accurate deductions in

studying the past formations than any other which has yet been undertaken. Since the bulk of the various strata have been laid down in sea-water, it is obvious that a study of marine life and its mode of occurrence is of the utmost importance to palæontologists. Without this knowledge we must confess that some of their work is a little open to the charge of being empirical. Mr. Hunt for years past has endeavoured to utilize the lessons of the sea for geological purposes, both on the biological and physical side.

There is one other point I should wish to mention before proceeding with the main portion of my subject; viz., the formidable amount of criticism which all those who write on Devonshire topics may expect to incur. Besides the "Notes on Notices of the Geology and Palæontology of Devonshire," there have at times appeared certain notes on "slips" connected with this county. If you slipped in South Devon, you were picked up by Mr. Pengelly; if you slipped in North Devon, ten to one that you fell into the hands of Mr. Townshend Hall. Now Devonshire is a very hilly country—a very difficult country, as every hunting man knows—and it is not so easy to go across such a country without making a slip sometimes. In fact, there used to be a tradition in former days, the origin of which no doubt may be traced to some malevolent wise man from the East, that the Devonshire coat of arms was a pair of broken knees. This perhaps helps to account for the aforesaid slips, to which allusion has been made. Possibly these remorseless critics may hold the doctrine that the President for the time being, like the Sovereign, can do no wrong, and thus regard his address as outside the pale of their operations.

But it is now time for me to revert to geological questions; and in the first place let me endeavour to impress upon you how powerful is the influence which the geological structure of a country has exercised upon the condition and fortunes of its inhabitants. As regards economical conditions this fact has been well pointed out by Mr. Worth in one of his many valuable contributions to the *Transactions* of the Association. Let us now apply to this doctrine another test. If any one cares to study what may be called a political map of the British Isles, he cannot fail to be struck with the influence of geological lines. With but few exceptions, the supporters of the present government, whether Conservatives or Liberal Unionists, are returned from districts on Tertiary and Secondary Rocks, whilst their opponents can claim to have almost all the Palæozoic Rocks to themselves. It may be

said that this is due to ethnological rather than to geological causes, since the more Celtic districts, such as Scotland, Ireland, Wales, and Cornwall, move in one direction, whilst the Anglo-Saxon districts move in another. But the ethnological status is largely due to geological causes in the first instance; hence the ethnological argument ultimately becomes a geological one. Besides, there are other considerations which influence the political boundary-lines which are wholly of a geological nature, such as the prevalence of mines, whether of coal or metals. Now, as far as I know, Devonshire is the only county in England which contains both Tertiary, Secondary, and Palæozoic rocks; and the political results may be said to be of an equally mixed character.

Some will argue that such a coincidence is only of a temporary nature, and that any considerations based thereon must be of a purely fanciful character. Admitted to a certain extent that this is so, it does not invalidate the main argument that geological features greatly influence the character and conditions of a country's inhabitants. How different is the aspect of this county to that of Glamorgan, across the water. And yet this arises from a mere difference of development in the same system of rocks; *i.e.*, the Carboniferous. Devonshire in this respect shares the fate of Ireland—plenty of Carboniferous rocks and but little coal. However, since the South Wales coal-field, according to the calculations of Price Williams, will be exhausted in somewhat less than eighty years, doubtless the population will have to fall back on some other source of power than coal. No picture can be more frightful than that of a used-up Black Country; and it is satisfactory to reflect that, if Devonshire does not share the questionable advantages arising from an abundance of Black Diamonds, her future sons are not doomed to maintain a precarious existence in the midst of a wilderness of cinder-heaps, pit-rubbish, and ruined tenements. A few abandoned copper-mines are as nothing to this.

Without doubt it was the metallic wealth of this region which first drew the attention of other nations to Britain. This was especially the case with regard to the trade in tin, which is said to have influenced Cæsar in his invasion. Not that British tin-mining is to be regarded as of the very highest antiquity, since recent investigations (*L'Étain dans l'Antiquité, Revue des questions scientifiques*. Brussels, 1888) render it probable that the material for the earliest bronzes was obtained in Central Asia, probably either from the Altai

or from the Hindoo Kush. Nevertheless, British tin-mining is very old, although both Spain and Brittany have contributed their share. Even now, notwithstanding the general diminution in the output of metallic minerals, other than iron-ores, throughout Great Britain, the yield of the tin mines of Devon and Cornwall for the year 1887 was valued at £878,831 as against £415,000 in the year 1837 (De la Beche), being, in fact, rather more than double what it was fifty years ago. A very large proportion of this comes from the foot of Carn Brea, in Cornwall.

How different is the case of copper the inhabitants of this district know too well! In 1837, according to De la Beche, the value of the copper ore from Devon and Cornwall alone was £950,000, whilst in 1887 the value was only £18,800. Of this small amount one-third was yielded by the Devon Great Consols; which also yielded in that year one-half, by value, of all the arsenic mined in the United Kingdom. It is reported that fully 500 metalliferous mines have been closed during the last ten years throughout the United Kingdom, not so much from lack of ore, as from the abundance of foreign supplies.

But let us leave economics, especially when the contemplation of them does not present us with the most cheerful of pictures. It is more to my present purpose to point out that from Devon and Cornwall sprang the Geological Survey of Great Britain, originally called the "Ordnance Geological Survey," which then formed a branch of the Trigonometrical Survey. The results of these early labours are summarized in the classical report by De la Beche "On the Geology of Cornwall, Devon, and West Somerset," published in 1839. This remarkable book constitutes a model for all subsequent geological memoirs, and still holds its place as a work of reference, notwithstanding the great progress of geological science after the lapse of half a century. This may be regarded as the jubilee year of the first systematic geological Report undertaken by Government officers. Since then what flood of official memoirs has issued from the bureaux of all the great states in the world; those of the United States, perhaps, passing all others in magnitude and in wealth of illustration!

We can have little doubt that this part of England had the honour of leading off the geological surveys of the world because of its great metallic wealth, and because of the interesting and complicated phenomena associated therewith. But it must not be supposed that the early surveyors

settled every question fifty years ago, especially when we bear in mind the varied nature of the region, the obscurity of many of the problems, and the comparative novelty of the task. Devonshire especially has been the theatre of many a geological battle since then, nor can we aver that the temple of Janus is at present closed. It is twenty-one years ago, I believe, since a President of the Devonshire Association dealt with any of these topics from the chair. Mr. Pengelly, in the year 1868, after giving an admirable summary of the progress of geology in Devonshire up to that date, propounded nine questions for special consideration in the future. These I venture to recall to your memory—

1. The age of the crystalline schists of the Bolt.
2. The precise chronology of our Limestones and associated rocks.
3. Is there, east of Exmouth, a break in the Red rocks?
4. Whence come the Budleigh-Salterton pebbles?
5. Whence also the porphyritic trap nodules so abundant in the Trias?
6. Are our Greensands really of the age of the Gault?
7. Whence the flints so numerous in our existing beaches?
8. What is the history of our superficial gravels, and are there any indications of glaciation in Devonshire?
9. To what race did the Cave-men belong?

During the interval of over twenty years most of these questions have been discussed, often by Mr. Pengelly himself, and the records are to be found in the volumes of your *Transactions*. Confining any remarks I may have to make on the present occasion to points bearing on the physical history of the county, I would say that these questions may be grouped under five heads—(1.) Recent and Pleistocene geology; (2.) The extent and nature of the Cretaceous rocks; (3.) The New Red question; (4.) The Old Red question; and lastly (5.) The age of the crystalline schists, to which may be appended any necessary remarks on petrological questions.

RECENT AND PLEISTOCENE GEOLOGY.

The recent geology of the county is famous, as all the world knows, for the occurrence of raised beaches, submerged forests, and bone-caves. On these I scarcely venture to touch, the cave question especially verging on the confines of archaeology. If the caverns at Oreston were first made the subject of scientific enquiry, those of Kent's Hole and

Brixham have yielded results of surpassing interest. Going a step further back in time, there are few problems more obscure than the history of the plateaux gravels of the southern counties: these consist largely of flint. Mr. Parfitt, speaking of the drift gravels towards Dawlish, has expressed his opinion that the agents producing these were ice and water. To this we can scarcely demur, but it was hardly necessary to have included Devonshire in the ice-sheet. The indications of glaciation in this county are matters of inference rather than self-asserting, and observers, like Mr. Somervail, accustomed to the marked features of a thoroughly glaciated country, are slow at finding any evidence of it here. Still it must be obvious to all who reflect upon the subject that the cold which has left such enduring evidences of its intensity in areas so near, for instance, as Caernarvonshire, must have affected the Devonshire climate to a considerable extent. The absence of true boulder-clay should reconcile the Devonian to the fact that his county is destitute of cowlips, which are very partial to the boulder-clay soils of the North of England, and are far from scarce in the heavily-bouldered regions of East Anglia. It is true that the Swedish botanist Nathorst, speaking of the peculiar mixture of clay and stones known as the "Head" of Bovey Tracey," called it boulder-clay; and Mr. Pengelly likewise mentioned lately that another Scandinavian authority, Dr. Torell, when in company with Mr. Ormerod as long ago as 1868, professed to have detected three moraines on Dartmoor in the neighbourhood of Chagford. That these were the results of an ice-cap, as that term is generally understood, I do not regard as probable; but bearing in mind the recorded facts, and also the frequency of such features as "terminal curvature," we may well believe with Mr. Worth in the existence of something like a local snow-cap on the higher grounds. The peculiar nature of the cave-breccia, and the Arctic character of some of the cave-animals, also point in the direction of a colder climate. Not that this evidence is really required, except as a matter of corroboration. We may believe, then, in a glaciation so modified that its results require close search before they can be appreciated.

THE EXTENT AND NATURE OF THE CRETACEOUS ROCKS.

There are few problems in the physical history of the South-west of more interest than this one. Speaking of the geology of the neighbourhood of Dawlish, Mr. Ussher says

there can be little doubt that the Cretaceous highlands of Devon, such as the Haldons, are portions of a great plain of marine denudation, and he speaks of a time when that Cretaceous tableland abutted on the flanks of Dartmoor. He also refers to the presence of flints both in the old and the more modern gravels as evidence of the extension of Chalk *débris*. It is interesting to know that abundant fossil evidence of the former existence of Middle Chalk (the Upper Chalk of some writers) is found in the chert and flint beds which form the capping of Little Haldon; the Echinodermata are especially characteristic. Mr. Ogilvie Evans has called attention to this fact.

As regards the former extension of the Chalk, I see no reason to doubt that the western part of what is now the Channel and the greater portion of Devonshire and Cornwall were submerged beneath the Chalk Sea. It seems to me that in no other way can you account for the quantity of flints on the western beaches, and in the bottom of the Channel. But irrespective of this corroborative evidence, one would expect the Chalk Sea to have extended in this direction. Then comes the question, Was there any western limit to the Chalk Sea, or did its waters mingle freely with the Atlantic Ocean during the period of extreme depression? At the epoch when the Upper Greensand, or basal sediment of the Chalk, was being laid down, Mr. Jukes-Browne, in his *Building of the British Isles*, represents the extreme western shore-line, plotted on the existing map of Devon, as passing from the Ermemouth towards the Haldons; *i.e.*, roughly parallel to the E.S.E. flank of Dartmoor. Now the distance from the Ermemouth to the present edge of the deep Atlantic basin is about two hundred miles, and that two hundred miles would represent the width of the land which intervened between the Upper Greensand Sea and the Atlantic Ocean at the particular period indicated in the hypothetical map to which I have referred. It is a question for separate consideration whether that intervening space of land was wholly or only partially submerged at a later epoch during the period of extreme depression. For our purpose it will be sufficient to have carried the western margin of the Chalk Sea beyond the limits of the Cornish peninsula during the period of lowest depression, and this I think we may fairly claim. I ought to observe that it is not assumed that the English Channel had any existence at that time. Mr. Jukes-Browne regards the Channel as a very modern feature in physical geography, but the existence or non-existence of the Channel

as a mere excavation will hardly affect the question of the westward boundary-line of the Chalk Sea.

One more question of Mr. Pengelly with reference to Cretaceous geology remains; viz., the age of the Devonshire Greensand. It was Fitton, and after him Meyer, who maintained that the Blackdown Beds were of Lower Cretaceous age, although before their time De la Beche had classified them as Upper Greensand, whilst Godwin-Austen described them as possibly a sandy condition of the Gault. The littoral facies and abundance of *Trigonia*, having considerable resemblance to Lower Greensand species, led Mr. Meyer astray. Dr. Barrois and other authors entered the lists, and when Mr. Downes read his excellent paper before the Geological Society in 1881 the balance of opinion tended to the view that the Gault, or most of it, is represented in the Blackdown Beds, and that seemed also to have been Mr. Downes' opinion. If the ammonites in that gentleman's collection have been correctly determined, there would seem to be a mixture of Lower Gault with Upper Gault forms; but as the Upper Gault of the East of England is represented to a considerable extent in the West by the Upper Greensand, it follows that, if we allow most of the Gault to be represented in the Blackdown Beds, such a determination carries the Upper Greensand with it, so that both De la Beche and Godwin-Austen were right.

There is not a trace of Lower Greensand, and when we bear in mind that the Lower Greensand has already disappeared to the eastward, its revival at Blackdown would be an anomaly. But a further argument in this direction, which Mr. Downes, aided by Mr. Vicary, was the first to indicate, is derived from the fact that the nine lowest horizons identified at Blackdown are missing at Haldon. This proves conclusively that the basal rocks of the Upper Cretaceous ever occupy a higher horizon as we proceed westwards, and, as we have already seen, this has an important bearing on the question of the final westward limit of the Chalk Sea. It is quite possible also that the missing beds of Chalk were more siliceous than their equivalents further eastwardly, and this would still further help to account for the flints so numerous in the Channel and adjacent shores.

There are two points in connection with Blackdown which might be mentioned: 1st, Mr. Downes read a paper before the Geological Society in November, 1884, "On the Cretaceous Beds of Black Venn, with some supplementary remarks on the Blackdown Beds." There he appeared to arrive at the

conclusion that the *Lima-parallel*-bed of Black Venn is lower than the lowest of the Blackdown Beds, for it thins out before reaching Sidmouth. He again notices the general thinning out westwards. These latter conclusions are somewhat at variance with his previous ideas that the Blackdown Beds represent the whole of the Gault, and he finally inclined to the opinion that the Blackdown Beds were Upper Greensand rather than Gault. I have before pointed out that the Upper Greensand partly represents the Upper Gault of the south-east of England, and this interpretation will help to explain the apparent contradiction.

2nd. The mode in which the clumps of *Turritella* and *Pectunculus* occur in the Blackdown Beds reminds me of the similar way in which their modern representatives occur in the English Channel. Not far from Hope's Nose is a muddy bed full of *Turritella*, showing how the shell is apt to accumulate from some cause or other in one or two particular spots, and throughout the Channel it is by no means uncommon to come across *Pectunculus* in great numbers at particular spots.

NEW RED BEDS.

The New Red question next demands our attention, since, with the exception of a shred of Lias, Jurassic rocks are entirely absent from the county. The phenomena in connection with the New Red beds are of great interest in spite of their poverty in organic remains. We are as much interested in the composition of these beds as in ascertaining their precise chronological value. Thus two of Mr. Pengelly's questions relate to the composition of Triassic pebble-beds. It would certainly appear from Mr. Davidson's determination of the Brachiopoda that a considerable portion of the Budleigh-Salterton pebbles were of Devonian origin or aspect, although there are a sufficient number of admitted or possible Silurian species. Thus Salter's original proposition that they are Norman types of the May Hill Sandstone may in part be correct, the fossils being characteristic of beds on both sides of the Channel. The rocks from which such pebbles were derived are certain to be no longer in existence; the pebbles themselves are mere survivals of an ancient denudation, just as is the case with the flint pebbles whose origin we have lately been considering. It is not difficult to believe that both Silurian and Devonian beds were largely developed in portions of what is now the Channel area. Indeed the form of the

present peninsula of Normandy clearly points in that direction, whilst projections of Palæozoic rock from what is now the Devon-Cornwall peninsula may likewise have contributed their share. Hence an extension of the Gorran Haven beds, or of La Manche, points almost equidistant, may have been amongst the missing rocks from whose hardest parts some of these pebbles were long ago torn. There is no evidence, so far as I am aware, that the English Channel, in anything like its present form, had any existence in Mesozoic times, and we may well believe this without going so far as Mr. Jukes-Browne, who represents the English Channel as merely a feature of Pleistocene geography. Doubtless the origin of the English Channel is a problem well worthy the attention of Devonshire geologists, but at present we are considering the composition of Triassic pebble-beds, and must not, therefore, allow ourselves to be led off on a false scent.

Mr. Pengelly's other question, as to the origin of the porphyritic-trap nodules, is one which embraces a far wider scope; for along with it must be considered the subject of igneous fragments in the New Red generally. One would be disposed to say that most of them were derived from the felspathic traps, so many of which make their appearance at the junction of the Carboniferous and New Red. This peculiarity of position Mr. Vicary was disposed to attribute to the circumstance that these traps have served to arrest denudation in the Trias. It is said that none are to be seen in the coast section. Mr. Vicary regarded the earliest eruptions of this class of rock as having taken place between the close of the Carboniferous and the commencement of the Triassic, whilst the latest outbursts were of Triassic age. Mr. Downes also, whilst endeavouring to account for the presence of some Upper Devonian fossils in the Trias near Tiverton, has expressed his opinion that the hypothesis of an active volcano upon the coast of the early Triassic sea best meets the requirements of the case. Mr. Somervail likewise has expressed his views on the probable volcanic origin of the breccias at the base of the Trias in South Devon, and as to the conditions prevailing during their accumulation.

It cannot be doubted that a careful and unprejudiced study of the igneous rocks in the Devonshire Trias will help to throw much light on an important stage in the physical history of the area. But in undertaking such an investigation due allowance must be made for the changes which the fragments have themselves undergone in a highly

permeable formation. If lumps of hard limestone, under the influence of siliceous infiltration, have been converted into that peculiar form of orbicular silica known as "Beekite," we need not be surprised at feldspars, derived originally from Dartmoor, having been converted into Murchisonite, which chemically differs from orthoclase mainly in containing somewhat more alumina.

And thus it came to pass that pieces of Dartmoor granite were unrecognizable, whilst a generation of geologists, following De la Beche and Godwin-Austen, were disposed to believe that during the New Red epoch, the granite of Dartmoor had not as yet reached the surface. Lately, speculation has taken quite a different turn. Mr. Worth is disposed to think that the granite of Dartmoor passed upwards into felsitic and volcanic rocks, remnants of which, he says, are to be found in the Triassic conglomerates of the county. Geologists, therefore, having started with the belief that the Dartmoor granite was covered up by sedimentaries in Triassic and pre-Triassic times, are now presented with a picture of a pre-Triassic volcano towering into the skies. It is also intimated that andesites and specimens of volcanic grit such as arise from the denudation of volcanic cones have been found in much more recent deposits.

Confining our attention for the present to the New Red rocks, one would suppose that if the above speculations have a good foundation, the evidences of volcanic rocks derived from the disintegration of the old Dartmoor volcano ought to have been much more abundant in the Triassic conglomerates than they have hitherto seemed to be. But the further investigation of this matter must be deferred until we have considered the chronology of the New Red beds.

We now perceive the import of the question put by our propounder of riddles, "Is there east of Exmouth a break in the 'red rocks'?" So recently as 1881 Mr. Pengelly wrote: "I incline to the opinion that our Red Rocks, taken as a whole, belong to the Keuper; or, if not, that all three sub-systems of the Trias are represented in Devon." Of course, when Mr. Pengelly thus infers the existence of the middle member of the Trias, he can only mean that the Muschelkalk is represented in time.

Mr. Ussher, four years previously, had given in the *Transactions* of the Association the results of his experience in the classification of the Triassic Rocks. His view was that whilst in the Midlands there is complete unconformity between the Bunter and Keuper, in Devonshire the Triassic

beds present a conformable series. He also showed that the beds cut out at Straight Point and Exmouth, in the south coast section, are visible in the inland districts, thus practically answering Mr. Pengelly's question in the negative. The once prevalent notion, therefore, that the whole of the Devonshire Trias is of Keuper age, a notion which seemed to have the support of high authority, must be abandoned. A series of marls and sandstones, called by Mr. Ussher "Middle Trias," he thought might roughly represent the Muschelkalk in time, whilst his "Lower Trias," consisting of sandstones and breccias with igneous fragments, so well developed between Dawlish and Watcombe, is mainly of Bunter age. The older beds would presumably occur to the westward, but there does not seem at this time to have been a suspicion of Permian on the part either of Mr. Ussher or Mr. Pengelly. Mr. Ormerod, in his notes on the deep borings in the Trias at Teignmouth, also describes the beds between the Exe and the neighbourhood of Torquay as belonging to the Bunter.

In a communication to the Geological Society Mr. Ussher speaks of the lowermost beds of the south-coast Trias as far exceeding their more northerly equivalents in thickness, and as affording a strong probability that a reconstruction of the area of the English Channel valley would exhibit a still greater development of beds, dating as far back perhaps as late Permian times. It is thus evident that Mr. Ussher considers that a large extent of New Red rock has been destroyed in the formation of the English Channel, and possibly portions may yet be proved in the bed of the Channel itself. Mr. Worth, as you know, considers that he has evidence of the existence of Triassic rocks *in situ* fifty miles to the south-west of the Triassic outlier at Cawsand, in Plymouth Sound, but it is rather a peculiar feature in this case, that the supposed submarine Trias resembles the Keuperian or eastern variety of the Devonshire Red Rocks. Mr. Irving, who has paid some attention to these questions, differs from Mr. Ussher, and still more from Mr. Pengelly, in the belief that the breccia series is of Permian age. He regards it, in fact, as the result of terrestrial and littoral deposits on the flanks and on the shore-line of the old mountain region of which the Devon-Cornwall peninsula is one of the remnants, the high inclination of the dip being in favour of its being mainly composed of mountain detritus.

It would be difficult indeed to assign any other origin to the wonderful group of beds which constitute the sea-cliff between Teignmouth and Dawlish. The only matter

in dispute is the precise chronology of these beds. Shall we say with Mr. Pengelly that they are of Keuper age? or, with Mr. Ussher and Mr. Ormerod, that they are of Bunter age? or shall we agree with Mr. Irving that they are of Permian age? In the absence of marine mollusca the precise age of any series of beds is difficult to determine; all that we can affirm with absolute certainty is that they belong to the Permian-Triassic interval, and that in this country such beds are more usually Permian than Triassic. The brecciated beds of the Leicestershire Permians, for instance, have been recently shown to be composed of the re-arranged talus of the harder portions of the Palæozoic rocks surrounding that part of the old Permian lake.

THE POST-CARBONIFEROUS INTERVAL.

Leaving the question of the actual chronology of the Dawlish beds as almost hopeless in our present state of knowledge, we must be content to bear in mind the main facts of the case; viz., that towards the close of the Carboniferous period one of those great shifts in the earth's crust occurred, of which there have been three or four during geological time. Roughly speaking the Palæozoic epoch terminated with this great movement, whose flexing action has, in the main, governed the axes of the series of synclinals and anticlinals existing between the Bristol and English Channels, with an extension towards the south so as to include the peninsula of Brittany. The principal of these earth-throes occurred during the unrepresented period of time which intervened between the Coal-measures, as usually developed, and the Permian; and though there are evidences of subsequent oscillation in our district to a moderate extent, no instances of folding and contortion occur in the beds deposited afterwards. Then it was that the building of the British Isles commenced in earnest, and that the first rude sculpturings of the future Devonshire were made. Some of these points we shall have to consider again in reference to the general structure of the county.

THE CARBONIFEROUS.

Before proceeding to answer the remainder of Mr. Pengelly's questions a few words may be devoted to a formation which in Devonshire is both extensive and disappointing. No attempt will be made to correlate any portions of these beds with their

presumed equivalents on the Welsh side. All we can say is, that the Old Red of the Welsh border does not differ from the Devonian of Devonshire more than does the Carboniferous of Wales from beds of the same system in this county. The Culm-measures are something *sui generis*, and it seems difficult to account for their origin.

It may be worth mentioning in this connection that Dr. Barrois, speaking of the physical history of Brittany, which presents certain analogies with that of our south-western peninsula, observes that the Carboniferous period in that region was one of oscillation between terrestrial and marine conditions—a period of extensive eruptions and great earth movements. Hence he says, that a considerable portion of the sediments, especially towards the base, are of volcanic origin. This is not at all the case with the Carboniferous in North Devon, where the sequence is undisturbed. According to the views generally accepted, the main horizon for contemporaneous igneous rocks in the Palæozoics of Devonshire lies in the Lower Devonian, though there seems to be some difference of opinion upon this point.

THE OLD RED OR DEVONIAN QUESTION.

This may with justice be termed the home question; but in order to attempt a solution, it will be found necessary, in the first instance, to take into consideration the Old Red Sandstone of other areas. The claim of the Devonian to recognition as one of the great geological systems has been challenged more than once; and even when this has not been disputed, there have been divers contradictory efforts to fit in the marine Devonians with the several members of the Old Red Sandstone. In North Devon the matter was further complicated by the great Jukesian heresy, based on the alternative supposition of a concealed anticlinal with an inversion towards the north, or more probably an east and west fault. These ideas, as you know, were successfully combated by Mr. Etheridge and Mr. Townshend Hall in the earliest days of the Association; and about ten years ago the latter gentleman reviewed the history and classification of the North Devon Rocks in an able paper which appeared in the *Transactions*. His own classification of the North Devon beds differs in details from that adopted by Ussher and Woodward; but this is a matter of minor importance, since all agree in regarding the Ilfracombe limestones and associated slates as a definite central datum line,

from whence to proceed either above or below. Mr. Hall observes that the North Devon beds from Lynton to Pilton, though preserving a general dip to the south, are folded into many anticlinals, reducing their apparent thickness very considerably.

Having got the North Devon beds, which are really the key to the whole Devonian system, into something like order, it now becomes necessary to quit the county for a while in order to study the Old Red Sandstone on the other side of the Bristol Channel. And here we realize the fact that there are two Old Red Sandstones, the Lower of which is perfectly conformable with and passes down into the underlying Silurian, whilst the Upper passes conformably into the Carboniferous, of which system, in a certain sense, it may be regarded as the base. It is only in recent years that this unconformity between the Upper and the Lower Old Red Sandstone has been fully recognized. Moreover, this is by no means a local phenomenon confined to the Welsh districts, since in the South of Ireland there is a great hiatus between the presumed equivalents of the Pickwell Down beds above and those of the Lynton beds below. Thus both in the South of Ireland and in South Wales the time representatives of the Ilfracombe and associated beds are absent. These three districts are more or less involved in the great post-Carboniferous east and west folding, and may be said to belong to the same system of physical disturbance. But even in Scotland Hugh Miller's Old Red Sandstone is found to consist of two portions, the lower part shading off into Silurian, the upper into the Carboniferous. Thus, throughout the British Isles, what was formerly known as the Old Red Sandstone is found to consist of two very distinct members, widely separated from each other in point of time, each having affinities with the neighbouring system. If, then, the case rested on the Old Red Sandstone alone its fate would only differ from that of Poland in being partitioned between two instead of three ambitious neighbours.

Having learnt thus much with regard to the Old Red Sandstone, it is now time to return to North Devon, where we have a fossiliferous series interposed between beds which are held to be the equivalents, *mutatis mutandis*, of the Lower and Upper Old Red Sandstone respectively. It is these fossiliferous beds which forge the link that was missing, whilst the intermediate yet independent character of their fauna justify, on palæontological grounds, their being regarded as the head-quarters of a distinct and separate system. The

more copious development of the remains of marine organisms in the corresponding beds of South Devon further justify the original determinations of Lonsdale. It is these central beds, therefore, which constitute the backbone of the Devonian system; and if the correlations to which I have alluded be substantiated, they must carry with them the Upper and Lower Old Red Sandstone as integral parts of that system.

It seems to be generally admitted that the Pickwell Down Beds are really the equivalents of the Upper Old Red Sandstone. Perhaps it was Professor Hull who first suggested this, but nearly ten years ago Mr. Champernowne, whilst agreeing that the Pilton and Marwood Beds should be referred to the Carboniferous, considered the Pickwell Down Sandstone to be true Old Red Sandstone, and also Upper Devonian. The fact of the Pickwell Down Beds being unfossiliferous lends additional probability to this view. The correlation of the lowest Devonian beds with the Lower Old Red Sandstones seems more open to discussion. In the first place the subject is complicated by the suggestion that the Foreland and Hangman Grits are repetitions of the same beds by means of faulting, and secondly the arenaceous beds of the Lower Devonian in North Devon yield some marine mollusca. The resemblance of the Foreland Sandstones to the Glengariff Grits was regarded by Professor Hull as most striking. On the whole there still seems a little obscurity as to the details of the lowest Devonian beds on the Bristol Channel.

There would be no use in considering the Devonian sequence in South Devon until that in North Devon had been fairly settled. It is not always that opportunities are afforded for studying a set of beds in duplicate within a limited distance, but I have had occasion to notice, more than once, the very great differences of development that present themselves under such circumstances within areas not so very far apart. Doubtless the original differences were very considerable, since South Devon must be regarded to a certain extent as a reef region, and the beds moreover were largely reinforced by contemporaneous volcanic matter of a basic nature, from which the equivalent beds in the North Devon were almost entirely free. But in addition to these congenital elements of difference are others belonging to a subsequent period, such as a further extravasation of igneous rocks, and above all the extraordinary folding and compression to which the beds have been subjected. The

confusion is something terrible, and we may regard the district as practically unmapped, although, thanks to Mr. Champernowne and others, a certain amount of correlation with the North Devon beds has been established.

The backbone of the system is constituted by the Great Devon and Plymouth limestones with their associated upper and lower slates, the upper or Dartmouth slates more especially corresponding with the Morte slates of North Devon. Underlying these central beds, or Middle Devonians, are the Torquay Grits, containing the *Homalonotus*-beds, some of which struck Mr. Champernowne as being suspiciously like certain Ludlow rocks. These of course are naturally correlated with the Hangman Grits and Lynton Slates. Whether beds as low, or even lower than these, occur in any other part of South Devon I am not in a position to state; but the beds of Yealmlton Creek have been placed on this horizon, and some geologists have even spoken of Silurian beds in the country north of Tavistock. On the other hand, the Upper Devonian, according to Mr. Champernowne, is represented by the Cockington Grits, originally described by De la Beche as Old Red Sandstone, and these are the equivalents of the Pickwell Down Beds of North Devon. For Mr. Champernowne the Upper Devonian would appear to terminate with these beds, which he correlates with the *Psammites du Condroz*. Mr. Ussher, in describing the relations of the Devonian and Culm rocks on the east side of Dartmoor, observes that, as a rule, the Upper Devonian Rocks occur in faulted association with the basement beds of the Culm-measures. But in the area between Bovey Tracey and Bickington the uppermost Devonian beds are irregular slates, similar to the Pilton beds, and in one or two unfaulted junctions they pass up into Culm-measures, which are overlain by indurated shales of the Coddon Hill type. These recent observations of Mr. Ussher would seem to complete the analogy between the Devonian rocks in North and South Devon.

It would be beyond the limits of a Presidential Address if I were to follow this very interesting subject much further on the present occasion; indeed, on the part of the geologists, I feel bound to offer some slight apology to the rest of the meeting for our having dwelt so long on a matter which can only be handled in a somewhat technical fashion. I hope to have demonstrated that considerable progress has been made with the Devonian question during the last twenty years, although as Mr. Whidborne says, in his preface to the *Devonian*

Fauna of the South of England, the correlation of the different parts of the system with the major divisions in America and the Continent may still be a matter for discussion. Crumpled up and reversed as the beds are in South Devon, their stratigraphy will always be complex; but it is probable that in their original condition there was considerable resemblance to the Rhenish and Belgian Devonians, pointing to the prevalence of fairly similar conditions during the period of deposition.

Referring to the subject of correlation with Continental beds, there is an article in the *Neues Jahrbuch* for the present year "On the Devonian of Devonshire and the Boulonnais," written by Herr Kayser, which, he says, is the outcome of a trip to the South-west after the Geological Congress of last autumn.

Herr Kayser finds in South Devon a development which intimately approaches the West German. In the Upper Devonian of that region he recognizes nodular limestones with *Clymenia* (more typically developed at South Petherwin), "Cypridinen-Schiefer," Adorf Goniatite-limestone, Büdesheim-shales, and Iberg coral- and brachiopod-limestone. In the Middle Devonian he recognizes *Stringocephalus*-limestone, *Calceola*-limestone, *Calceola*-shales, and possibly also Goslar-beds. In the Lower Devonian he finds the Upper and Lower Coblenz stages and "Siegen Grauwacke" especially represented by a small but typical fauna at Looe. This general agreement is further increased by the appearance of numerous "greenstones," which, just as in Nassau and the Harz, are accompanied by schalsteins.

He notes the difference of development in North Devon. In the Upper Devonian the *Clymenia*-limestone, the Adorf Goniatite-limestone, and the Iberg coral-limestone are missing. In the Middle Devonian he notes the absence of the great *Stringocephalus*- and *Calceola*-limestones of South Devon. The Lower Devonian of this area, with its preponderance of hard quartzitic sandstones and grauwackes, does not for the present permit of any close comparison with the Rhenish or Belgian-French Devonian. He recognizes the horizons of the Pilton beds and of the *Cucullæa*-zone, or Baggy beds, which seem to have their Continental analogues rather in Belgium than on the Rhine, but there is nothing in those countries to represent the Pickwell Down Sandstone. So likewise the phyllitic shales of Morte and Ilfracombe, which alone represent the whole Middle Devonian of North Devon, are equally without analogues.

From the above we may fairly conclude that the North Devon beds have very little in common with the Devonians on the Continent. But it is mainly through the North Devon beds, as we have already seen, that the Devonians generally can be made to fit in with the two members of the Old Red Sandstone. Both geographically and in character the North Devon beds occupy an intermediate position between the calcareous-volcanic Devonians of the South and the coarse quartzose sediments of the Welsh border, altogether devoid of mollusca. If we regard the "Old Red" of South Wales as an inshore deposit over an area which was deluged with fresh water from off the land, we can believe that further out to sea, in the times of the Lower Old Red, conditions were favourable for a moderate amount of marine mollusca. This does away with the necessity for a barrier, and also, in a general sense, it suggests a kind of gradation between the Old Red, the North Devon, and the South Devon deposits.

BOLT ROCKS, ETC.

The age of the crystalline schists of the Bolt. Besides the mere chronology of the subject, there are questions of considerable interest in connection with these schists, the consideration of which more or less involves the physical history of the bed of this part of the Channel, as well as of the adjacent lands. In this connection also we may endeavour more especially to review the physical structure of the entire South-west, to which allusion has already been made in reference to the effects of the great post-Carboniferous disturbance so obvious throughout Devonshire.

The subject generally is by no means ripe for final decision, and even if we limit our observations, in the first instance, to the Bolt Rocks and their submarine connections, real or supposed, we must allow that, if metamorphism has usually proved an obscure question, the study of metamorphism under water is hampered with additional difficulties. There are no rocks in the country whose age and origin, even to this day, are so much debated as those which, speaking generally, we may term the Bolt Rocks.

Of the numerous theories which have been advanced, the most doubtful, it seems to me, is that which regards the mass as the result of progressive metamorphism from the action of underlying or contiguous submarine granite. Allowing, for the sake of the argument, that there is progressive metamorphism, although Professor Bonney and Miss Raisin

distinctly deny it, there is very little in the chlorite- and mica-schists of the Bolt district which resembles the peculiar fringe of partially metamorphic rock due to contact with a granitic mass. Such fringes are usually marked by abundance of andalusite, amongst their other characteristics, especially when slates are invaded. Yet we do not hear of this mineral in connection with the Bolt rocks, though it must be admitted that the microscope has revealed the existence of kyanite, hitherto unsuspected.

Let us now for a moment examine the case for progressive metamorphism, which has found a recent advocate in Mr. Somervail. Many of us perhaps, in common with that gentleman, fail to understand why all metamorphic rocks, not absolutely the result of contact action, should be claimed as Archæan. But this unwillingness to accept their Archæan age does not compel us to believe that there has been progressive metamorphism, whereby an extension of the Dartmouth Slates, even with the addition of interbedded igneous rocks, has yielded, under peculiar circumstances, the mica-schists and chlorite-rocks of the Bolt. Mr. Somervail's argument, that the chlorite-rocks are the metamorphic equivalents of interbedded sheets of igneous rock on the north side of the syncline, though ingenious, is scarcely convincing. A series of chemical analyses at this stage of the argument would be useful. On striking the balance of evidence it seems probable that the slaty beds are wholly distinct from the true metamorphic rocks in the south. If reliance is to be placed on the microscope this must be regarded as proved. I would remark also, that few things are more deceptive than an apparent sequence in a highly compressed region; so that the presence of a fault is more often a matter of inference than of direct observation in such districts.

It is not absolutely necessary for us to believe that the crystalline schists of the Bolt are of Archæan age, if indeed we know exactly what is meant by Archæan. But I think that there are fair reasons for considering them to be older than the Devonian against which they abut; and that, in point of fact, they owe their present position to having been involved in the anticlinal uplift of which there are traces here and there along the channel-shores of the Devon-Cornwall peninsula.

And this brings me to the consideration of the general structure of Devonshire from a stratigraphical point of view. Regarded as a whole, every one knows that Devonshire is a

broad synclinal. The Lower Devonian beds of Torquay on one side and of Linton on the other are practically on the same horizon, and, omitting minor curves and breaks, the extensive region between these two points is one great trough of Palæozoic rocks. But if we start again from the neighbourhood of Torquay in the direction of Dartmoor it is still found that, on the whole, newer beds come to the surface as the south-east flank of the Granite mass is approached. No matter how the beds in the immediate vicinity of the Granite may be affected, the south-east flank of Dartmoor must be regarded as lying in a depression, relative to the coast-rocks at the points already mentioned. Again, shifting our position considerably with regard to the central mass of Granite, we find a suspicion of Lower Devonian rocks at Yealmpton, and a certainty of them at Looe, all pointing to the conclusion that there are traces of the northern wing of an anticlinal on the Channel coast. An inner and more deeply-seated portion of this anticlinal, in places resulting in a dislocation and possibly an inversion, has brought up the crystalline schists of the Bolt. With these perhaps may be associated inferentially the gneissic rocks in the neighbourhood of the Eddystone, mixed with other crystalline rocks, such as those mentioned by Mr. Hunt. But if the submarine granite or granites have had no more effect than that of Dartmoor in uplifting the country, they must be regarded as factors of minor importance in the structure of the Channel anticlinal.

Of course, the probability of an anticlinal axis in the English Channel has long been recognized, and indeed the space between the Devon-Cornwall peninsula and Brittany is wide enough for many a flexure, the mean result being an east and west axis of principal uplift, the exact position of which it is impossible to determine. Taking a wide geographical view of the subject we cannot fail to see that there is, first of all on the north, the synclinal of the Glamorganshire coalfield; next the anticlinal of the Bristol Channel, both being rather limited in extent. The second and central synclinal is that of Devonshire, somewhat bulged by the mass of Dartmoor. The succeeding anticlinal of the English Channel was, in all probability, of a very complex nature, bringing up to-day many old and curious rocks, more or less injected by granites, of which we now have the evidence in the Channel Islands, to say nothing of the traces in the bed of the Channel itself, such as Mr. Hunt has so often brought to the notice of the Association.

Beyond this mysterious region of the Channel lies the rocky country of Brittany, which, according to Dr. Barrois, is essentially constituted by a vast geosynclinal depression, running from east to west. The flanks of this great basin consist of very ancient rocks, not quite parallel to each other, but converging somewhat towards the west, and opening out towards the east. The area enclosed has numerous secondary folds, and includes a large series of beds from the Silurian to the Carboniferous. In this region also there are granites, but of more than one age, and Dr. Barrois thinks that they have rather a tendency to follow the anticlinal axes.

Brittany, therefore, constitutes our third great synclinal; but in that country a far lower sequence of beds is brought to day than in Devonshire, proportionate in fact to the much greater area of the country itself. The principal folding movements there also date from Carboniferous times, and thus the entire region, from South Wales to Brittany inclusive, belongs to what we may call the Hercynian system of mountain-making. It is interesting to note that, in the vicissitudes of time, the three synclinal areas still keep their heads above water, whilst the two areas occupied by the anticlinals are submerged—a by no means uncommon geognostic feature. I am not quite prepared to believe that, on this meridian, the so-called Hercynian system ever attained to any great degree of elevation, though undoubtedly of great width. Its degradation has contributed enormously to the Mesozoic deposits, and in a lesser degree perhaps to the Tertiaries of the country to the eastward.

TAVISTOCK COUNTRY.

The geological phenomena in the neighbourhood of Tavistock are of such interest that I cannot do better than close this address with a brief allusion to some of the features of the west side of Dartmoor, and the adjacent country.

It is a region which has always presented peculiar difficulties, but the new line of railway in course of construction may help to clear matters up. The subject can be grouped under four headings: (1) The structure of the country; (2) the nature of the basic igneous rocks, or "greenstones;" (3) Dartmoor; (4) the metalliferous deposits.

(1) *The structure of the country* on the west side of Dartmoor differs considerably from that on the east side, more especially in the fact that the Devonian beds are represented as dipping

towards the sea instead of away from it; at least this is the case for several miles immediately north of Plymouth. Further towards the north, in the direction of Tavistock and beyond, there would seem to be a complexity of structure unusual even for Devonshire. Consequently the boundary between the Devonian and Carboniferous, as laid down in the Survey map, may be subject to considerable revision. Mr. Worth astonished us lately at the Geological Society by the statement that the town of Tavistock is actually on the Carboniferous, and yet that, owing to a complex series of foldings, the Devonian rocks are brought up on both sides. I know of no spot in the United Kingdom where the geological boundary lines seem to be so much under discussion at the present moment.

Although Mr. H. B. Woodward, in the map attached to the *Geology of England and Wales*, follows De la Beche in assigning the Brent Tor district to the Carboniferous, it has long been claimed as Devonian by some geologists. These views are perhaps the result of Mr. Rutley's interesting work on the schistose volcanic rocks west of Dartmoor, described as consisting of alternations of lava-flows, tuffs, and tufaceous sediments. That this class of rock, locally known in its vesicular form as "honeycomb dunstone," was of a volcanic nature, had long ago been recognized by De la Beche; but it was the late Mr. John Arthur Phillips who first clearly demonstrated, in his classical papers on the Cornish "greenstones," that many of these beds were actually lava-flows. Mr. Rutley went a step further, and considered that he had found in Brent Tor a fragment of one of the old volcanic necks. His famous diagram, with its column of ashes flattened by the wind, described by himself as "a chimera which may embody a certain amount of truth," is familiar to all geologists. Nay, so graphic was the picture, and so convincing the arguments, that a certain Mr. Thorpe fancied that he had corroborative evidence of the prevalence of the south-west wind in Devonian times, because, forsooth, he had found lapilli from Brent Tor in the joints of a limestone at Newton Abbot.

Let us express a hope that before the Association next meets at Tavistock the boundaries between the Devonian and Carboniferous may have been made as clear as noonday, and accurately laid down on a six-inch map, which shall itself be a model of cartography.

(2) We must now take into consideration the *nature of the basic igneous rocks*, commencing with those which are

interbedded, most of which are now said to be of Devonian age. Before doing so it will be necessary to say a few words about the "killas," a very loose term better understood by miners than geologists. Judging from Mr. Worth's remarks on the stratigraphical relations of the Devonian rocks of South Devon, most of the "killas" of this district belongs to the grey and drab slates intersected by lodes and elvans, which was described by Conybeare as the metalliferous series: above this comes a group more variable in its nature, which is especially characterized by interbedded volcanic rocks, and Mr. Worth suggests that the Brent Tor series may belong to this group: above these again are the purple and green slates immediately underlying the Plymouth limestone. The main point to notice is, that the whole of this slaty series is regarded as below the Plymouth limestone. Consequently it must belong to the lower part of the Middle Devonian, and possibly to even lower beds. Mr. Rutley, if I recollect rightly, regarded the Brent Tor series as possibly in the Upper Devonian.

The interbedded basic igneous rocks, then, are placed by Mr. Worth a long way below the Plymouth limestone; whereas the late Mr. Champernowne, in an interesting posthumous communication to the Geological Society, was disposed to regard his Ashprington volcanic series as above the main limestone of that district. In reference to this difference of opinion two points seem to present themselves for consideration. Firstly, that the schalsteins need not be confined to any particular horizon in so thick a series as the Middle Devonian; secondly, that the phenomena of extravasation, whether interbedded or transgressive, is limited, with very unimportant exceptions, to the southern portion of the county, from whence the line of igneous products may be traced into Cornwall. Hence the area of erupted rock is local, and to a certain extent linear, and is probably not absolutely confined to any particular geological horizon.

The interbedded basic igneous rocks have been described by numerous authors, and their general petrographic features are fairly well known. In Northern Cornwall, according to Mr. J. A. Phillips, these ancient lavas are called "dunstones." Specimens analyzed by him were found to contain 42 per cent. of silica, over 20 per cent. of alumina, and the alkali is almost entirely soda: the amount of lime is nearly twice that of magnesia, and there is over 12 per cent. of protoxide of iron. From a chemical point of view these rocks, then, are allied to the basalts.

The intrusive "greenstones" are classed by Mr. Worth under three heads. They are sporadically developed, but seem to be most numerous and of the largest size in the vicinity of Dartmoor: they are believed to be older than the Dartmoor granite, which is said to alter them. If the Survey mapping is correct, the so-called gabbros between Marytavy and Wapsworth occur in Carboniferous rocks, and must of course be younger than the beds into which they are intruded. These gabbros, Mr. Worth considers, are the vestiges of a widespread pre-Dartmoor igneous activity, producing basic rocks. He points out that their relations to the granite, both here and in Cornwall, are too persistent to be accidental, and he suggests that they may represent the basic forerunners of the more acidic granites. The age of the rocks into which the Marytavy "gabbros" have been injected still remains to be settled, but the notion that either they or the granites have brought up the lowest stratified rocks is not borne out by experience in other parts of the area round Dartmoor.

(3) Having now cleared the way a little by a brief glance at the containing rocks, we are in a position to attempt the study of *Dartmoor* itself, that supreme monument of the old eruptive forces. Dartmoor, as every one knows, is contained partly in Devonian and partly in Carboniferous rocks, and from the position of the *Posidonomya*-beds it is probable that the lower part of the Carboniferous adjoins the granite. Mr. Ussher, speaking of the beds on the northern and eastern flanks of Dartmoor, observes that the Culm-rocks dip off the granite above Belstone in a marked manner. He also says that the Culm rocks on the north are roughly parallel in their strike to the margin of the granite, whilst on the east and west their strike is cut off, so to speak, by the granite or else deflected. These considerations are of importance as showing how the granite lies in its case.

From what has already been said, it is perfectly clear that this granite is in nowise connected with anything of the nature of an anticlinal axis bringing up older rocks. In fact on the east side, where it abruptly terminates, its relations to the adjacent country are almost those of a synclinal. On the Tavistock side its relations with the adjacent country are more obscure, owing to the stratigraphy of the district being as yet undetermined. Moreover, there is probably an underground connection on this side, through Hingston Down, with the granite boss of Brown Willy.

The above considerations tend to show that the relations of the granite to the surrounding rocks are somewhat peculiar, and that it is not exactly easy to frame a theory to satisfy all the conditions. The composition, which is that of a normal potash-granite, and the contact phenomena, are clearly against the notion of any large absorption of the containing rocks, such as are now accessible to observation. There has been much nonsense talked about granites being the result of the extreme metamorphism of the beds in which they occur. Mr. J. A. Phillips in his paper "On the Rocks of Cornwall in relation to Metalliferous Deposits"¹ showed very clearly that, although the different kinds of killas vary materially in composition, under no circumstances could the mere re-arrangement of the constituents result in the production of granite.

He gives a table with the chemical composition of ten varieties of Cornish killas, showing a range in silica from 33 to 68 per cent., and of alumina from 10 to 24 per cent. The alkali is mainly soda, and of this there is a considerable amount in some specimens, pointing to the conclusion that killas has been largely derived from the dissemination of very fine volcanic matter of a basic composition. This coincides with the prevalence of contemporaneous volcanic phenomena. It is worth noting that the roofing-slate of Delabole affords an exception to this rule, in containing more potash than soda.

As there is no reason to suppose that the early chemical history of the Dartmoor granite differs materially from that of the Cornish granites, their sources must have been deep-seated, and they must have originated under the ordinary conditions which produce the granitic magma, whatever those may be. The main questions remaining to be considered are the period and circumstances under which the Dartmoor granite assumed its present position.

There is no evidence at present, as far as I know, which would enable us to fix the period any nearer than the somewhat vague date "the close of the Carboniferous." Dr. Barrois says that many of the Brittany granites are of Carboniferous age. But in the case of Dartmoor it is probable that the great foldings of the Hercynian mountain system had been mainly effected, and the synclinal of Devonshire formed before the granite was insinuated. In position the mass of Dartmoor is outside the axis of the Cornish granites; if their alignment was followed the centre

¹ *Quart. Journ. Geol. Soc.* vol. xxxi. p. 319.

of Dartmoor would be about Hatherleigh. Hence the stratigraphical position differs somewhat from that of the Cornish granites, although, possibly, their age may be quite the same. It is enough to know that an immense physical revolution was effected all over the British Isles between the close of the Carboniferous and the beginning of the Permian, and the intrusion of the Devon-Cornwall granites must have taken place either then or in early "red rock" times.

Next, as to the circumstances under which the Dartmoor granite found its way into its present position. Last year Mr. Ussher treated this great question with characteristic ingenuity, and showed pretty conclusively that neither the punching theory nor the absorption theory would meet the facts of the case. De la Beche gave us a valuable hint, as indeed he was in the habit of doing, when he inferred that, owing to the volcanic activities which had prevailed in the area during the deposition of the Palæozoic series, a line of least resistance to a body of granite, impelled upwards, might have been formed. In this way the granite of the great bosses may have been forced through ground already weakened as the site of old volcanic vents, such as Brent Tor, we might add.

Of course, it must be remembered that the contacts we now see only represent a certain stage in the relations between the granite and its case. A million years ago, when the country was much higher relatively, the contacts may have presented a somewhat different phase, whilst it is certain that those who are able to inspect the contacts after another million years of atmospheric denudation, will at least get much nearer to the roots of the matter. As far as I am able to judge from Mr. Ussher's descriptions, there are indications of a considerable lateral thrust on the north and on the south side of the mass, parallel to the mean strike of the enclosing beds. This looks very much as if the main displacements which took place were lateral, the beds yielding to the pressure gradually, and thus helping to intensify the flexing of the district.

How far the evidence is in favour of Mr. Ussher's suggestion that Dartmoor is a laccolite, insinuated at the junction of Devonian and Carboniferous rocks, I am unable to say. This seems a somewhat ignominious termination to a career which patriotic Devonians have regarded as nothing less than the plutonic supply-pipe of a regular volcanic cone, more lofty than that of Etna. Possibly the two theories may be recon-

ciled by regarding the supposed laccolite as a kind of reservoir, or local thickening in the pipe.

It was Professor Bonney who first set the Devonshire geologists on the look-out for the vestiges of the great Devonshire volcano. Not a mere Brent Tor this time, erupting its lavas into the Devonian Sea, but one of a line of lofty peaks of far later date. "Among the many excellent geologists and enthusiastic students of the West of England," said he, "is there no one who will undertake to replace the covering which has been stripped from the granitic bosses?" He also indicated that a thorough study of the "red rocks" of Devonshire would yield important results in this direction.

Mr. Worth is amongst those who have responded to this challenge, a circumstance to which allusion has already been made in dealing with the New Red question. It is somewhat singular that if there really was a volcanic cone covering the Dartmoor pipe, the traces of it should have to be sought at the eleventh hour in the "red rock" breccias. These ought to be full of unmistakeable fragments of old acidic lavas, and of the felsites which are structurally intermediate between such lavas and granite. Possibly the want of adequate petrographic knowledge may have hitherto retarded the discovery, and we naturally await the result of further investigations.

But Mr. Worth himself has supplied evidence which goes far to explain the presence of remnants of felsitic, and even of volcanic rocks, in accumulations more recent than the "red rock" breccias. Such remnants are much more likely to have been derived from the elvans, which form so characteristic a feature in the country between the Dartmoor and Brown Willy granites, and some of which probably reached the surface in a more glassy condition than the portions now accessible to operations. Besides, even the existing dykes are represented in some cases as developing a semi-vitreous ground-mass with porphyritically imbedded crystals.

Theoretically it is extremely probable that the granite bosses of Devon and Cornwall may have passed upwards into volcanic rocks, and that consequently they represent a line of eruptive vents which were possibly active in Permian times, or those immediately preceding. But the petrological evidence is not conclusive. If we suppose that the "red rock" breccias are of Triassic and not of Permian age, all, or nearly all, traces of the volcanoes might have been removed before the breccias were accumulated. Clearly the granite, with its characteristic crystals of orthoclase, had been laid bare when the beds containing Murchisonite were deposited.

As regards the composition of the Dartmoor granite, the accessory minerals such as schorl, and the proneness of portions to kaolinization, are especially noteworthy. This latter feature has a tendency to produce unequal weathering, and it is probable that the Tors are partly due to the unequal weathering brought about by this cause. They represent portions which, in the hour of trial, were harder and perhaps chemically more stable, and consequently less liable to disintegration. The forms of the Tors, as was pointed out by Prof. Rupert Jones, and more recently by Mr. Ussher, have been largely determined by the arrangement of the divisional planes, the mass being intersected by what he calls impersistent cracks, running more or less horizontally and crossed vertically or obliquely by joints. Variation in the direction of these joints is accountable for much of the variety in the Tors themselves.

(4) *The metalliferous deposits.* The abundance of schorl, especially on the edges of the granite, and the kaolinization of the feldspars, are indirectly connected with the last subject which it is proposed to bring to your notice; viz., the origin of the metalliferous deposits for which this region is so famous.

It is, I believe, admitted that the great east and west fissures through which the elvanite has been injected were formed after the consolidation of the main mass of the granite, though their chemical composition points to their having been derived from the same magma as the granite. The next step in this curious underground history appears to have been the formation of a series of empty fissures, most of them having a more or less east and west orientation. And now commenced a fresh set of phenomena which, in an extremely modified sense, may be said to be still in operation.

The fissuring of this region was probably due to reaction after the strain consequent on the system of folding, to which allusion has been so often made. When first this fissuring, or gaping of the rocks, occurred there was a supply of molten silicates from below more than sufficient to fill up the void. But, as often happens in volcanic regions of modern date, the last stage of primary activity is represented by fissuring without injection of molten matter. A number of open cracks are thus formed, which favour the circulation of underground waters, often intensely heated, and not seldom passing off as condensed steam where they happen to reach the surface.

In Devonshire and Cornwall, the period when this phase was at its height occurred most likely in late Permian and early Triassic times. But, as everyone knows, there have been many periods of shifting amongst the rocks; and doubtless the country must have participated in the great Tertiary earth-creep which folded the Downs and the Isle of Wight, about the same time that the Alps were being raised into a mountain-chain. Each successive movement would be apt to produce modifications in the underground circulation, cramping it here and stimulating it there; and doubtless, as the temperature decreased, the solvent powers of the waters would diminish also.

To such underground circulation in old volcanic districts like this most of the phenomena in connection with metalliferous veins are due, though it must always be remembered that here we see a plutonic phase of what were volcanic activities at higher levels in earlier times. Fifty years ago De la Beche and the first Surveyors evinced an intense interest in this subject, and in the Memoir already referred to many hypotheses of origin are discussed. Since those days the world has been revolutionized in more ways than one, and in no way more than in the transfer of mining enterprise. But the experiences of the last five-and-twenty years in the Tertiary volcanic districts of North America have not been lost upon the numerous able men who have been employed as engineers or surveyors in those highly-metalliferous regions. The late John Arthur Phillips left a record of his great knowledge and experience in his excellent treatise on *Ore Deposits*. And I have no doubt that many here are more or less acquainted with the important works of the French *savant* Daubrée, whose "*Études synthétiques de Géologie expérimentale*" and "*Les eaux souterraines aux époques anciennes*" furnish us with an immense amount of information on the origin of metalliferous veins.

Briefly, it may be said that the underground circulation theory is the one most generally adopted, the chief difference of opinion being as to the relative importance to be assigned to *lateral secretion* and to *ascension* respectively; or, stated in simpler terms, whether the vein-material comes from the sides or from below. It is reasonable to suppose that both sources may have contributed to the supply, though in certain cases a change in the deposits, accompanying a change in the "country rocks," would seem rather to favour the notion of lateral secretion. Thus Mr. Phillips remarks, with regard to the Tavistock district, that the copper-ores are often associated

with a blue-clay slate. If the slate becomes deeper in colour iron-pyrites alone occurs; and if the rock becomes quartzose even the pyrites disappear.

Whilst endeavouring to trace the source of the ores in metalliferous lodes we should bear in mind the experiments of Sandberger, who found that the heavy metals occur in the silicates of the crystalline rocks of every age. Augite and the magnesia-micas are especially rich, and the lithia-micas are noted as being stanniferous. The origin of tin ores is probably different to that of the sulphuretted ores, though both are often best developed at the junction of igneous and sedimentary masses. This, of course, is partly accounted for by greater facilities for fissuring, and still more by an increase of heat, which is likely to promote the underground circulation, and above all to increase the solvent power of underground waters.

The question of solution has always been a difficult one, and has inclined some people to adopt the notion of sublimation of the metallic sulphides. As an alternative theory we have had the reduction of sulphates by organic agency. But people are beginning to think that both these agencies may be dispensed with, and that, under peculiar conditions of heat, pressure, and dissolved gases and salts, the solvent powers of water may be largely increased. Anyhow, it is perfectly certain that metallic sulphides, such as cinnabar and pyrites, are being deposited from hot springs along with various forms of silica, both in California, and at Steamboat Springs in the State of Nevada. We may well believe that this latter place, of which an account was given in the *Quarterly Journal of the Geological Society* as long ago as 1864, represents with a certain amount of fidelity the conditions which prevailed in the upper portions of the metalliferous lodes of Devon and Cornwall during a period, not of maximum activity, but when a considerable deposit was taking place.

The solution and transport of tin-ores are capable of a different explanation. As is well known stanniferous deposits are not only very local, but are also accompanied by a peculiar group of minerals, such as topaz, schorl, axinite, and fluor, which contain a notable quantity of either Fluorine or Boron, and in the case of schorl of both these elements. Daubrée observed that this is the case wherever tin-ore has been found, and he suggested that, in the first instance, tin was brought up, from what he is pleased to call the general reservoir of the heavy metals, as a fluoride. The interesting

chemical experiments connected with this ingenious hypothesis are detailed in his great work on Experimental Geology. According to these views stannic-fluoride and steam would decompose each other at a moderately high temperature, the result being a deposit of binoxide of tin or cassiterite. The liberated hydrofluoric acid, besides helping to form such minerals as schorl and other fluo-silicates and fluorides, would enter into the general circulation of the rocks, and thus tend to facilitate that kaolinization of the felspars which has produced so much china-clay on the south-west side of Dartmoor, and in the mass of the Hensbarrow granite.

It is also worth noting in this connection that, according to Dr. Le Neve Foster, the great flat lode of Carn Brea, near Redruth, is in the main a band of altered rock, and he is inclined to suspect that half the tin-ore in Cornwall is obtained from tabular masses of altered granite. In such cases there is no regular lode, but very fine cracks in the rock have evidently given access to stanniferous solutions, which have deposited oxide of tin more or less abundantly in the vicinity of such cracks, and materially changed the nature of the original granite.

The phenomena in connection with these impregnations of tin-ore appear to favour Daubrée's views; but such points are to be commended to the notice of local geologists, who alone can test their suitability to explain the facts which come before them. I would merely remark that too much stress should not be laid on such cases as those of deer's antlers having been found partly replaced by cassiterite in the old river-gravels. This has been effected at ordinary temperatures, most probably by the aid of alkaline carbonates arising from the atmospheric decomposition of felspars, and proves that the most insoluble minerals may be successfully attacked by agencies now or lately in operation, and their metallic element moved from point to point, but only in very small quantities.

It is to be feared that chemical questions such as these possess but little interest for some of the Members of the Association, and again I apologize for having introduced them, however briefly, before a general audience. But there are certain conclusions which we are enabled to draw without any special reference to chemistry. In the great metalliferous lodes we see the roots of old mineral springs and geysers, which spouted their water and steam into the air, and perhaps covered the surface of the ground with silicious sinter. That was a time when the volcanic forces of this

remarkable region were on the wane, and after the great outpourings of lava had taken place upon a surface of which every trace, perhaps, has been swept away. How long these hydrothermal agencies continued to be active one cannot tell, but it is by no means improbable that they were in operation throughout a considerable part of Mesozoic time, during which period the spoils of this western land, brought down by the ceaseless forces of denudation, partly found their way into the eastern sea, and thus helped to build up the deposits which were afterwards to be fashioned into the Secondary rocks of England.

[Since the delivery of this address, Mr. Collins, of Redruth, has written to say he considers there is evidence in the Tavistock district that the metalliferous deposits, containing copper ore, had been formed in the Devonian rocks before the deposition of the main mass of the Carboniferous. The large copper-bearing lodes of Marytavy, for instance, are in Devonian rocks, and cease altogether on coming into contact with the black schists of the Carboniferous.]

Obituary Notices.

COMPILED BY

THE REV. W. HARPLEY, M.A., HON. SECRETARY OF THE ASSOCIATION.

(Read at Tavistock, July, 1889.)

I.

CHARLES SPENCE BATE, L.D.S.R.C.S. Eng., F.R.S., F.L.S., &c., was born at Trennick, Truro, on the 16th March, 1818. He was the eldest son of Mr. Charles Bate, who for many years practised as a dentist at the Octagon, at that time one of the suburbs of Plymouth. He was educated at the Truro Grammar School under the late Dr. Ryall. On leaving school he entered the surgery of Mr. Blewett, where he remained about two years; he then devoted himself to the study and practice of dentistry with his father. After becoming duly qualified he removed, in 1841, to Swansea, where he soon acquired a considerable practice. While at Swansea his taste for those branches of natural history, by his knowledge of which he afterwards became distinguished, was developed. He was admitted into the society and friendship of the leading scientific men of the place; and on the occasion of the visit of the British Association to the town, in 1848, he took an active part in arranging for the reception of that body, and became a member. On more than one occasion subsequently he was President of one of the sections. He was mainly instrumental in securing the visit of the Association to Plymouth in 1877; and as one of the Vice-Presidents at that meeting, he contributed largely by his liberal exercise of hospitality to make the gathering a pleasant one.

In 1851 Mr. Spence Bate left Swansea and returned to Plymouth, taking up his residence at 8, Mulgrave Place, and succeeded to the practice of his father, having inherited even

more than his father's skill. As a dentist he was almost unrivalled, both as an operator and also in his later years as a dental mechanician. His practice included members of most of the families of note in Plymouth, and for many miles round. He was the author of many works on dentistry. Some of them were published separately, others in the *Lancet*, the *British Journal of Dental Science*, the *Medical Gazette*, and in the *Transactions of the Odontological Society*, to the presidency of which he was elected in 1885, an honour which had never before been enjoyed by any dentist practising in the provinces. Two years previously he had been President of the British Dental Association. In 1881 Mr. Spence Bate was a Vice-President of a section of the Medical Congress. He was Honorary Surgeon-Dentist to the Plymouth Dental Dispensary, and Honorary Surgeon-Dentist to the Devon and Cornwall Orphan Asylum.

Nor was it only in dentistry that Mr. Spence Bate became celebrated. He devoted a large amount of time to the investigation of the habits of marine animals, and, in conjunction with Mr. Westwood, was the author of a work in three volumes, which soon became a standard authority, on *British Sessile-eyed Crustacea*. The value of this work was fully recognised by the scientific world, and, chiefly on the strength of its authorship, Mr. Bate was made a Fellow of the Royal Society, and thus was brought into companionship with some of the leading scientific men of the age. Other works by him on the same subject were a catalogue of *Amphipodous Crustacea*, and a Report, the compilation of which engaged his close attention several years, on the *Crustacea Macroma*, collected by H.M.S. *Challenger* during the celebrated scientific cruise of the vessel round the world. The work was only completed a year ago, and of its kind is unsurpassed in thoroughness and value. Indeed, it may be considered that Mr. Spence Bate was the greatest living authority on this branch of Natural History.

He was keenly interested in all scientific matters connected with the town of Plymouth and county of Devon, and it would be difficult to estimate how much of the prosperity of many now flourishing local societies is due to the guidance and energetic support they have received from him. The restoration of the Plymouth Institution to somewhat of its former activity, after a period of comparative inertness, must be ascribed to him. The following record of his work in connection with that Society serves to bear out this remark :

Elected a member of the Institution in 1852, he became

Secretary 1854-60, President in 1861-2 and 1869-70, and was a Member of Council 1853-83. He was likewise a Museum Curator (Geology, Apparatus, and Antiquities) at different times, and the Editor of the *Transactions* in their present form 1869-83.

He delivered the following lectures :

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|------------------|--|
| Jan. 13th, 1853. | The Fossil Flora of the Coal Measures of the South Wales Basin. |
| Nov. 3rd, 1853. | Ivory. |
| Nov. 2nd, 1854. | The Rise and Progress of Literature in Europe. |
| Dec. 14th, 1854. | The Marine Vivarium. |
| Jan. 11th, 1855. | Zoophytes. |
| Feb. 12th, 1857. | William Elford Leach, M.D. |
| Jan. 28th, 1858. | Crustacea. |
| Feb. 1st, 1858. | On the Nidification of Crustacea (published in the <i>Transactions</i>). |
| Mar. 10th, 1859. | Gypsies. |
| Oct. 3rd, 1861. | Presidential Address. |
| Feb. 20th, 1862. | Geological Evidences of the Antiquity of the Human Race. |
| Oct. 13th, 1864. | Report on Progress in Geology. |
| Oct. 27th, 1864. | On a Cornish Kjökkenmödding. |
| Feb. 9th, 1865. | Roman - British Antiquities recently Discovered in the Neighbourhood of Plymouth (described by him in the <i>Proceedings</i> of the Society of Antiquaries). |
| Oct. 11th, 1866. | Relation of the Flint Implements of Devon and Cornwall to History. |
| Oct. 17th, 1867. | Recent Researches in Marine Zoology on the South Coast of Devon and Cornwall. |
| May 1st, 1867. | On the Dentition of the Mole. |
| Jan. (1), 1868. | On some Recent Researches in Constantine Bay, North Cornwall. |
| May 1st, 1868. | On a Double-spined Eagle Ray, caught by Trawlers off Plymouth. |
| Oct. 7th, 1869. | Presidential Address. |
| May 1st, 1869. | On some of the Antiquities of Dartmoor. |
| Oct. 13th, 1870. | The Prehistoric Antiquities of Dartmoor. |
| Oct. 12th, 1871. | Prehistoric Dartmoor. |
| Oct. 26th, 1871. | The Perambulation of Dartmoor, 1240. |
| Nov. 6th, 1873. | Grimspond and the Recent Explorations in the Vicinity (published). |
| Nov. 19th, 1874. | Ancient Crosses and Inscribed Stones of Devon (published, with additions, in the <i>Transactions</i>). |

- Feb. 27th, 1879. The Crustacea taken during the voyage of
H.M.S. *Challenger*.
Mar. 27th, 1879. The Evidences of the Scandinavian on
Dartmoor.
Oct. 6th, 1881. On an Ancient Grave at Trethill.
Mar. 30th, 1882. The Geographical Distribution of the
Crustacea.

Mr. Bate was one of the founders of the Devonshire Association, and during the first year of its existence (1862) was Senior General Secretary. In the following year he vacated this post, having been elected to the office of President of the Association. He delivered his Presidential Address at the Annual Meeting at Plymouth in 1863, and qualified as a permanent member of the Council. For several years he was seldom absent from the Annual Meetings, and when pressing engagements, especially his work arising out of the *Challenger* expedition, caused him to absent himself, he never ceased to take the liveliest interest in the progress of the Association, and he looked forward to the time when he should again be permitted to take an active part in its proceedings. The following is a list of the papers contributed by him:

- 1862. Bovisand Sand Beds.
- 1864. A Cornish Kjökkenmödding.
- 1864. A Barrow in Constantine Bay.
- 1866. An Attempt to Approximate to the Dates of the
Flint Flakes of Devon and Cornwall.
- 1867. On a Cornish Kjökkenmödding.
- 1871. On the Prehistoric Antiquities of Dartmoor.
- 1871. On the Clitter of the Tors of Dartmoor.
- 1871. A Contribution towards Determining the Etymology
of Dartmoor Names.
- 1872. Researches into some Ancient Tumuli on Dartmoor.
- 1872. On the Original Map of the Royal Forest of Dartmoor,
illustrating the Perambulation of Henry III., 1240.
- 1873. Researches into some Ancient Tumuli on Dartmoor.

He was an Honorary Member of the Torquay Natural History Society, Honorary Member of the Teign Naturalists' Field Club, and likewise Honorary Member of the Royal Institution of Cornwall, Truro.

Mr. Bate was also greatly interested in art. For many years he was a working member of the Plymouth Fine Art Society, and the products of his pencil were frequently exhibited, not only in connection with that body, but also in the art exhibition at Messrs. Harris's fine art gallery. He

was not eminent as a painter, but many pleasing and meritorious pictures, the offspring of his brush, remain in the possession of members of his family, and his intimate friends. Three months before his death he presided at the annual meeting of the Plymouth School of Art, when the Earl of Morley distributed the prizes to the successful students. He also took a very active interest in the Art, Science, and Technical Schools about to be erected as a Jubilee Memorial in Plymouth. He was chairman of the committee, and only two or three days before being seized with his last illness he presided at a committee meeting of that body. Less than a week before his decease he showed his continued interest by a letter concerning the arrangements for the new building.

Mr. Bate naturally felt a keen interest in the Marine Biological Association, and took an active and energetic part in connection with the Marine Laboratory recently established at the Plymouth Citadel.

About two years before his decease he associated with himself a managing assistant, when he ceased to be a daily visitor to Plymouth, although he was to be found in his surgery four or five mornings in every week. A few years previously he had purchased a country residence, called the Rock, at South Brent. There he died, after a brief but painful illness, on Monday, the 29th July, 1889, aged 71 years.

Mr. Bate was twice married. His first wife was Miss Hele, of Ashburton. She died in 1884. His second wife, to whom he was married about two years ago, survives him. He also leaves two sons, one of them, Captain McGuire Bate, of the Royal Engineers, the other, Dr. Hele Bate, of London, who was with his father throughout his last illness, and one daughter, Miss Bate, who has inherited much of her father's artistic taste.

Mr. Bate was a Freemason of long standing, and was widely known and much respected among his brethren in the province of Devon. He filled at various periods the principal offices of the brotherhood, and at the time of his death he was Deputy Provincial Grand Master.

He was a kind and indulgent father, and, as the writer of this brief sketch can testify from an intimate friendship of over thirty years, he was a staunch friend. It is perhaps needless to add that the loss of one of such varied and brilliant abilities will be severely and widely felt.

II.

WILLIAM BRODRICK, B.A., resided at Little Hill, Chudleigh, and became a Member of the Association in 1872. In 1865, in conjunction with Captain F. H. Salvin, he brought out the first edition of *Falconry in the British Isles*, of which a second edition appeared in 1873. Mr. Brodrick was an Honorary Member of the Torquay Natural History Society, and delivered lectures to that body on various occasions on the following subjects: "Falconry, as Practised in England in Former Times and at the Present Day;" "Birds: their Friends and Foes;" "Man in his Relation to the Lower Animals;" and "The Balance of Nature."

He was also a member of the Teign Naturalists' Field Club, and filled the office of President during the year 1877. He acted for several years as one of the Local Secretaries, and contributed papers on various branches of Natural History. He died at his residence, December 21st, 1888, aged 74 years.

III.

[The following obituary is substantially a copy of a notice which appeared in *Notes and Gleanings*, September, 1888, only a few corrections, omissions, and additions having been made.]

ROBERT DYMOND, F.S.A., died at his residence at Widecombe-in-the-Moor, near Ashburton, on Friday, August 31st, 1888. For some years past Mr. Dymond's friends, aware of serious heart mischief, and of the prolonged fainting fits to which he was subject, had felt his life to be a precarious one, but even with this knowledge the shock of his sudden death was hardly lessened. While walking near his house with Mrs. Dymond, on August 25th, he was attacked by one of his dreaded fainting fits, and notwithstanding the almost immediate attendance of his son-in-law, Mr. Tosswill, of Exeter, and afterwards of Dr. Huxley, of Torquay, and of Dr. Adams, of Ashburton, he never recovered consciousness, except at very short intervals; and on Friday morning, the 31st August, he quietly and peacefully passed away.

The late Mr. Dymond was a member of a family which, belonging to the Society of Friends, had for several generations held a respected position in Exeter and in the Western Counties. He was the eldest son of the late Robert Dymond, estate agent, of Exeter, who died in 1866, by Anne Priscilla, daughter of the late Mr. John C. Williams, of the same city, and was born 8th September, 1824, in the parish of St. Edmund, Exeter. He was educated at Mr.

Lovell Squire's school at Falmouth, and subsequently practised at Exeter as a land surveyor and estate agent, in partnership with his father and his younger brother, Mr. Frank Dymond. During the last few years, however, he ceased to take any active part in the business, which is now entirely in the hands of Mr. F. Dymond.

In 1851 Robert Dymond was married at Kingsbridge to Josephine, daughter of Mr. Joseph Hingston, of that place, and by this marriage he leaves a son, Arthur Hingston Dymond, and two daughters.

Though never taking a very active part in the municipal affairs of Exeter, he always took a warm interest in the public life of the city and the Western Counties, and in the year 1872 he was appointed one of Her Majesty's Justices for the city. For many years, and until his death, he sat on the Board of Directors of the West of England Insurance Company, of which he was President in 1879. Between the years 1848 and 1853 he was particularly interested in the work and welfare of the Exeter Literary Society, of which institution he was for several years Honorary Secretary, and before which he read numerous papers on various subjects. In 1875 he was appointed Honorary Secretary of the Devon and Exeter Institution, an office which he held jointly with Mr. Alfred Wallis at the time of his death. He was also a member of the Committee of the Albert Memorial Museum, Exeter; a member of the Council of this Association; a member of the Harleian Society; and a member of the Teign Naturalists' Field Club (President in 1885); and in 1872 he was admitted a Fellow of the Society of Antiquaries of London. It is probable that Mr. Dymond would not himself have sought this honour, and his election must be attributed to the kindly urgency of his friend, the late Mr. John Gough Nichols, F.S.A., the then editor of the *Herald and Genealogist*.

Robert Dymond was a man of very kind and genial disposition, and noted for his attentive courtesy and ready assistance to all with whom he came in contact. But it will be by his antiquarian and historical works that his name will go down to posterity, honoured and respected. From youth upwards he found delight in literary pursuits, and ever took an active interest in all that contributed to intellectual culture. He was a painstaking, zealous, and careful antiquary, and one who was particularly anxious to avoid those speculative enquiries and theories which have so often, since the time of Jonathan Oldbuck, brought the antiquary into disrepute.

His numerous papers and pamphlets on antiquarian and historical subjects were always well and carefully written, and possessed that quality without which all contributions to scientific enquiry and research are of little value—accuracy.

During the last meeting of the Association in Exeter Mr. Dymond, in spite of failing health, made a point of being present throughout most of the proceedings, and a paper of his on "Manor Customs in the Parish of Braunton" was read at this meeting. This paper and an Abstract of the Muniments of the parish of St. Petrock, are the last works from the pen of Robert Dymond. We can ill afford to lose such an honest, painstaking literary character as Robert Dymond, and his place cannot readily be filled; deeply regretted by his literary friends, with them his memory will ever be green. He died as he expected, and indeed desired—quietly and peaceably amongst the glorious hills and tors of the Dartmoor he loved so well.

In 1871 he published in the *Herald and Genealogist* an elaborate "Memoir of the ancient Devonshire Family of Cary," the result of years of labour and research amongst the extensive muniments preserved at Tor Abbey. And in 1873 this was followed by a paper read at a meeting of the Association at Sidmouth, on "Sir George Cary, of Cockington: a Devonshire Worthy of the Elizabethan Era."

The other papers read at meetings of the Association and afterwards published in the *Transactions* were, "John Dunning, First Lord Ashburton;" and conjointly with the late Rev. Treasurer Hawker, "John Ford, Dramatist," read at Ashburton in 1876.

Later appeared "Heraldic Discoveries in Exeter Cathedral," and a "Historical Sketch of Kingsbridge and Dodbrooke," read at Kingsbridge in 1877; "Historical Documents relating to Dartmoor," read at Ilfracombe in 1879; "Ancient Documents relating to the Civil History of Totnes," and "The Old Inns and Taverns of Exeter," read at Totnes in 1880; and "The History of the Parish of St. Petrock's, Exeter," read at Crediton in 1882. This was the work which above all others called forth the praise of competent judges, and the late Mr. Stephen Tucker, of the Heralds' College, afterwards Somerset Herald, wrote a review of the book in *The Antiquary*, calling special attention to it as an "almost perfect" specimen of painstaking research and historical knowledge.

With the artistic assistance of his friend, Mr. Sidney T. Whiteford, Mr. Dymond wrote for five years in succession the "Report of the Committee on Works of Art in Devonshire,"

and out of this work grew a paper on "Thomas Luny, Marine Painter," of which the first part was read at St. Marychurch in 1886, and the second part, containing a "Descriptive List of Pictures," at Plympton in 1887.

He was also much engaged as a member of a Committee in the transcript in extended Latin, and the translation into English, of the large portion of *Domesday Book* relating to Devonshire.

Amongst other pamphlets were two essays on agricultural subjects (one of which gained a prize), reprinted from the *Bath and West of England Journal* in 1856 and 1857; "Bampfylde House, Exeter;" a "History of the Suburban Parish of St. Leonard, Exeter," which was based on a paper read at a Meeting of the Exeter Naturalists' Club and Archæological Society in 1873; "Early Records of the Society of Friends in Devonshire in 1873;" "Exeter in the last Century," a lecture delivered to and published at the request of the members of the Exeter Literary Society, in 1887; and "A Deserted Meeting House and Burial Ground," reprinted from the *Friends' Quarterly Examiner*, in 1886.

In 1876 he edited and contributed largely to a book entitled *Things New and Old Concerning the Parish of Widecombe-in-the-Moor and the Neighbourhood*, which (as stated in the preface) was "compiled in connection with an effort to raise funds for the restoration of the fine old Parish Church of Widecombe-in-the-Moor," and the proceeds of its sale were devoted to that object. This book is now out of print. He contributed several papers to the *Archæological Journal*, as well as sundry reviews on antiquarian subjects in the local newspapers and other publications, besides numerous other papers bearing his name or initials.

It has been touchingly and very aptly remarked that, "whilst constantly alive to the uncertainty of his condition—yet death had no terrors for him, and he was able to enter to the last, with his usual cheerfulness, into his ordinary occupations. It would have been more distressing had he at all outlived his vigour and clearness of mind."

It is interesting to note that Mr. Dymond was the nephew of Mr. Jonathan Dymond, the author of *Essays on the Principles of Morality and on the Private and Political Rights and Obligations of Mankind*, a work which has attained a world-wide celebrity, and has gone through several editions, and of which Mr. John Bright observed in 1885, "I know no better book in our language, dealing with morals as applied

to nations, than *Dymond's Essays*. As the world becomes more Christian this book will be more read, and the name of the author more revered." This work, in two volumes octavo, which must be regarded as one of exceptional importance to issue from the local press at that time (1830), was printed by William Carss Pollard, son of the founder of the firm of William Pollard & Co., Exeter.

Mr. Jonathan Dymond, with other members of his family, founded in Exeter in the early part of the century an "Essay Society," their papers being known as the "Isca Budget."

IV.

REV. JOHN GUENETT entered the ministry of the Congregationalists from the Western College in 1836. He was appointed to the charge of the congregation at Point-in-View, Lympstone, in 1858, and occupied it till his death. The nature of the charge is unique, and deserves notice. About a mile and a half from Exmouth, on a hill standing a little off the Exeter road, in the middle of a field, is a square one-storied, flat-roofed structure, an ingenious combination of chapel and dwelling-house, and bearing the singular name of Point-in-View. The centre of the building is a single chamber not much bigger than an ordinary living-room; this is the chapel, and the roof has spread itself out so as to shelter four little almshouses, in which live four maiden ladies.

About the beginning of the present century some maiden ladies of the name of Parmenter built for themselves a residence a little further down the hill. Having no Congregational place of worship near, they built also a manse, chapel, and almshouses, endowed both charity and ministry, and left money for the education of six children. Miss Jane Parmenter did not live to see the completion of her scheme, and lies buried under the chapel. The others lived to worship there for many years, but there are none of the family name in the neighbourhood now.

Mr. Guenett was a skilled mechanic as well as musician, and since an instrument of any sort would trespass upon the already limited space within the chapel—capable of accommodating forty worshippers at the most—he made with his own hands an organ, the level top of which serves for a desk.

The pedal is within easy reach from the chair, and by raising the lid the keyboard is discovered just in front.

When the hymn is over, the lid, once more shut down, becomes a rest on which to place Bible, hymn-book, and manuscript.

Mr. Guenett became a member of the Association in 1876, and attended several of the Annual Meetings. He died at his residence, Point-in-View, on June 12th, 1889, at the age of 84 years.

V.

GEORGE ELLIOT HEARDER was one of the earliest members of the Association, having joined it in 1862, the year in which its first Annual Meeting was held. For several years he was one of the auditors of accounts. He was elected a member of the Torquay Natural History Society in 1845, but withdrew in 1848; he was re-elected in 1878, and continued a member until his death.

He died at his residence, Chelston Cottage, Cockington, Torquay, 23rd August, 1888, aged 75 years.

VI.

SAMUEL POSGATE KNOWLES, of Park Hill, Highweek, Newton Abbot, became a member of the Association in 1884. Although born near London, he had spent a large portion of his life in Devonshire, and for more than thirty years past dwelt at Highweek, enthusiastic in his love of gardening, and rejoicing in the beauties of the neighbourhood. He belonged to a family which had done good service to their country in connection with the Royal Navy, one member of which, Rear-Admiral Sir Charles Knowles, was in 1765 created a baronet for distinguished naval services, and in 1770 became chief president of the Russian admiralty. Another member of the same family, the late John Knowles, Esq., F.R.S., an uncle of Mr. Knowles, published a work *On the Preservation of the Navy*, which, before the days of steamships, was of much service, when men, interested in the welfare of the "wooden walls" of old England, studied with pleasure methods of preserving timber from decay. Proofs of appreciation of this work of his relative, in the shape of gold snuff-boxes, &c., from sundry crowned heads of Europe, were in Mr. Knowles's possession, and which he took pleasure in showing to his friends.

Mr. Knowles was, by descent and property, connected with Ashburton, being descended on his mother's side from an old

Devonshire family of Whitheare, whose remains rest in an ancient tomb in the churchyard of that parish.

With ample means, and a beneficent disposition, Mr. Knowles was ever ready to help the needy and to promote the welfare of those around him; and he left a further proof of his kindness in giving, by his will, £25 to the poor of his parish. He died at his residence, Park Hill, on May 6th, 1889, aged 77 years.

VII.

RICHARD LETHABY was the eldest son of the late Mr. William Lethaby, of Chumleigh, North Devon. He was born in 1812, and at a comparatively early age became manager to Messrs. Clowes and Sons, the then well-known military publishers. In 1861 he came to Sidmouth, succeeding to the printing, publishing, and stationery business carried on by Mr. Perry (late Hoyte) in the premises now known as the Fore Street Drapery Stores. Growth of business compelled him to remove to more commodious premises in Market Place, where he remained up to the time of his death.

Mr. Lethaby was the editor and publisher of the *Sidmouth Journal* until May, 1888 (a period of twenty-seven years), when, owing to the ill-health of the proprietor and other causes, the publication fell through. He took a great interest in local affairs, and during his career filled many public offices in the town. He was vice-chairman of the local branch of the C.E.T.S. from the time of its formation; and so great was his zeal in connection with the temperance movement, that it is stated he only once failed to attend the meetings of the society. He also served on the committee of the Cottage Hospital, and was a member of the Royal Society for the Prevention of Cruelty to Animals. The Burial Board benefited by his counsel and advice, and he was for many years a member of the Local Board of Health, and at the time of his death he was one of the town's overseers. In the summer of 1888 he was presented by the Rev. H. G. J. Clements, Vicar of Sidmouth, on behalf of the inhabitants, with a purse containing £60, as a mark of the esteem and respect in which he was held by his fellow-townsmen. In return, at the expiration of the publication of the *Sidmouth Journal*, Mr. Lethaby presented the vicar and Messrs. P. O. Hutchinson and Chessal, on behalf of the town, with a set of the journals bound in volume form.

Mr. Lethaby joined the Association in 1873, and took a very active part in organizing an exhibition of pictures, articles of vertu, and curiosities of all kinds, at the Annual Meeting of the Association which was held at Sidmouth that year.

He died November 8th, 1888, aged 76 years.

VIII.

GEORGE HENRY WHITE became a member of the Association in 1876. He never read a paper at any of the annual meetings, but he was a careful reader of the volumes of *Transactions* as they appeared, and on several occasions detected important errors, and furnished important items to the editor for the table of corrections.

Mr. White was also a proprietary member of the Torquay Natural History Society, served on its committee during the four consecutive official years from 24th May, 1882, to 28th May, 1884, and was a Vice-President during the first of them. He made many very valuable donations to that Society, including upwards of seventy volumes of books, presented at various times, and portraits—framed and glazed—of Spenser, Milton, and Shakspeare, the first two engraved by Alais, and the last by Cousins. He delivered an annual lecture before the Society from the Session of 1883-4 to that of 1888-9; and he was the author of fifteen papers, read at the monthly meetings at various times, from 1881 to 1889. He was also a member of the Committee of the Government School of Art, Torquay, and presented some valuable works to that school. He was himself an artist of no mean attainments. He was also a member and mainly instrumental in erecting the Free Library at St. Marychurch.

He died at his residence, Glenthorne, St. Marychurch, Torquay, 12th May, 1889, aged 71 years.

FOURTEENTH REPORT OF THE COMMITTEE ON SCIENTIFIC MEMORANDA.

FOURTEENTH REPORT of the Committee on Scientific Memoranda, consisting of Mr. Francis Brent, Mr. T. R. A. Briggs, Rev. W. Harpley, Mr. P. O. Hutchinson, Mr. H. S. Gill, Mr. E. Parfitt, Mr. J. Brooking Rowe (Secretary), and Mr. R. N. Worth, for the purpose of noticing the discovery or occurrence of such facts, in any department of scientific enquiry, and connected with Devonshire, as it may be desirable to place upon permanent record, but which may not be of sufficient importance in themselves to form the subjects of separate papers.

Edited by J. BROOKING ROWE, Hon. Secretary of the Committee.

(Read at Tavistock, July, 1889.)

FOR the fourteenth time the Committee submit their Annual Report to the Society.

The communications this year are not numerous, but of interest. As usual, it must be understood that the individual contributors are responsible for the statements made.

(Signed)

FRANCIS BRENT, Chairman.

J. BROOKING ROWE, Secretary.

I. ANTHROPOLOGICAL.

SHELL PITS AT CATTEDOWN.

“Within the past few months a couple of what, for present want of a better name, I may call ‘shell pits’ have been discovered at Cattedown, and investigated by Mr. R. Burnard and myself. They were found in quarrying on the northern slope of the hill, and consisted of deposits of shells lying on the natural rock, and covered by three to four feet of soil. They were within a few yards of each other. The first found consisted of about a couple of cartloads of shells, and these Mr. Burnard had removed to the adjacent works

of his firm (Messrs. Burnard, Lack, and Alger), and carefully examined, but without finding anything mixed with the shells. The second deposit has not yet been worked out, but so far presents similar characteristics. A thickly compacted layer of shells, generally about fifteen inches in thickness, and about six feet in breadth, lies on the rock about three feet six inches below the surface. There are no traces to be seen in the soil of a pit having been dug, but there is no doubt that these shells were originally purposely deposited in a hollow, natural or artificial; for they occupy in the main a shallow depression in the rock, on each side of which the limestone beds rise about a foot. The soil above seems to be undisturbed, and of general, as distinct from merely local, accumulation.

"The shells in both pits were of the ordinary tidal and littoral species, the common cockle largely predominating, with the limpet and periwinkle next in importance, some mussels, and an occasional whelk and oyster. The shells have not been disturbed since they were originally deposited, and they were placed there when they were fresh; for a number of the cockles have the valves still in immediate juxtaposition, and the pairs may be removed intact.

"There is at present no clue to the age of these deposits, nor does their purpose seem clear. They are not ordinary refuse heaps, for they lack the inevitable associations; and if the rock hollow in the second is artificial, an intention of some importance is indicated. A close examination of the first deposit revealed nothing but the shells; but the excavation of the second, though not complete, has yielded a few fragments of bones, not enough for absolute identification, but possibly human. Shells were associated with the pre-historic interment found in Stillman Street, Plymouth, and described by Mr. F. Brent in the Third Report of the Barrow Committee, and this fact is naturally suggestive. However, Mr. Burnard and myself are pursuing our investigations, and hope shortly to be able to solve the problem, which may prove a more important link in the pre-historic archaeology of Plymouth than at first sight appeared probable. (R. N. WORTH.)"

II. BOTANICAL.

"BOTH A PECULIAR FORM OF *HEDERA HELIX* (L.), THE COMMON IVY, AND THE YELLOW-FRUITED VARIETY, FOUND NEAR PLYMOUTH.

"In the autumn of 1888 I found, near Crabtree, in the parish of Egg Buckland, a large bush of the common ivy

that extended for about seven yards over an old wall, producing abnormal flowers of very curious character. I gathered some of these peculiar flowers, and sent them to Kew, and others to Dr. Maxwell T. Masters, author of *Vegetable Teratology* (Ray Society, 1869), and editor of the *Gardener's Chronicle*. He examined them, and described their features in that paper (vol. v., 11; 3rd series), January 5th, 1889. This notice has been followed by a longer one, also by Dr. Masters, in *Journal of Botany* (vol. xxvii., 172-76), June, 1889, under the title, 'An Erratic Ivy.' From this latter notice I extract the following:

"The normal flowers of the ivy, *Hedera Helix*, have perigynous or almost epigynous stamens, a partially "inferior" ovary surmounted by a dome-shaped disc continuous with, and which is indeed a mere expansion of, the base of the styles, as in the Umbelliferae. The interior has three or more cavities, with an axile placentation, and a single ovule pendulous from the upper and inner corner of each of the ovarian compartments. Some flowers, obligingly communicated by Mr. T. R. Archer Briggs, from the neighbourhood of Plymouth, presented a very different structure, and showed deviations from the natural conformation, such as have not to my knowledge been previously recorded. The "receptacle" was turbinate as usual, giving off, from its upper border, sepals and petals of the ordinary character, and arranged in the ordinary way. The stamens were hypogynous, and emerged from the receptacle around the base of a fleshy green cup occupying the centre of the flower. This cup was more or less fluted, and bore upon its free edge a ring of anthers of a reniform shape, and curled over the margin of the cup. There was no trace either of styles, placentas, or ovules; but within the cup the axis terminated in some instances in a small point, in other cases in a shoot bearing an imperfectly developed flower destitute of sepals and petals, but having a variable number of hypogynous stamens, and free ovary, with three isolated styles.'

"This description is followed by a reference to a figure made by Mr. Worthington Smith for Dr. Masters, and by the remark, 'It should be stated that the conditions were slightly different in detail in different flowers.' I may add to this extract, that when I gathered the specimens I could not find a single flower on the bush of ordinary character.

"Since I discovered this ivy I have found another of noticeable character, also growing in the parish of Egg Buckland, not a quarter of a mile from where I write this. Its peculiarity consists in its bearing berries of a yellow, instead of the usual very dark, colour. It encircles an old

ash tree, and being near a very old house may possibly have been introduced at a remote time. A portion of the ivy about this tree produced berries of the ordinary dark colour, due I think to two distinct bushes having grown up together around it. This is more probable than that a portion of one bush has 'sported' in the colour of the fruits, especially as the appearance of the ivy-stems at the base of the tree is not opposed to the view of there being two distinct roots of ivy below. The yellow-fruited variety of the ivy is, Mr. J. G. Baker, of Kew, informs me, usually called the Poet's Ivy. He says the name *Hedera poetica* goes back to Bauhin, and that *H. chrysocarpa* of De Candolle is substantially the same thing. (T. R. ARCHER BRIGGS.)"

III. GEOLOGICAL.

MICROSCOPICAL NOTES ON AN INTRUSIVE DYKE (ELVAN) TRAVERSING THE WHITSTONE, NEAR BOVEY TRACEY.

"*Structure*.—Granulitic or Leptynitic.

"*Minerals*.—Quartz, orthoclase, and altered plagioclase felspar, and biotite.

"The grains, much of a size, show movement to have been going on, preventing regularity of outlines.

"The quartz, when polarised, shows the rock to have been crushed and broken since its consolidation.' (GRENVILLE A. J. COLE.)

"The biotite shows pleochroism and contrast of colours pretty well, but little cleavage. Probably the mica lay with base in or near the plane of the section.

"We may call this rock a coarse quartz-felsite, an elvan, which has been broken and crushed since consolidation.

"This point will possibly be of use to geologists following out the excellent Geological Survey. Mr. Frank Rutley has given us much valuable information, especially in his account of Brent Tor.

"In the present instance we have three periods indicated: the original appearance of the Whitstone, the intrusion of the dyke, and the crushing movements subsequent to its consolidation. (MARSHALL HALL, Captain.)"

MICROSCOPICAL NOTES ON AN INTRUSIVE ROCK AT ODDICOMBE BAY, DEVON.

"*Porphyritic*.—The ground mass *doleritic*, with secondary minerals filling areas of decomposition.

"*Porphyritic Crystals*.—A plagioclasic felspar.

Ground Mass.—Lath-shaped crystals of plagioclase, characteristic of basaltic rock. Other minerals all appear secondary. Greenish serpentinous areas, also a calcite mass.

“Mr. Grenville A. J. Cole says, ‘The brown dot-like specks, under an eighth of an inch objective, much like Epidote, a likely product where lime abounds.’

“He agrees with me, that ‘the glassy matrix may have been destroyed by secondary devitrification.’—See TEALL’S *British Petrography*, p. 233, a magnificent work in every sense.

“The rock is evidently a much altered *Dolerite*. (MARSHALL HALL, Captain.)”

A DETRITAL DEPOSIT AT CATTEDOWN.

“In the summer of 1888 the existence of an ancient detrital deposit at Cattedown was discovered by Mr. R. Burnard, and investigated by him and by myself. It consisted of pebbles and subangular stones scattered through undisturbed clayey subsoil, immediately overlying the limestone, on the northern slope of Cattedown, sixty to seventy feet above datum, and at a depth ranging from three to five feet. The pebbles ran from 3½lbs. in weight down to a quarter-ounce or less; and that some, if not all, of them had been redeposited from fissures exposed to the action of water charged with carbonate of lime, was evident from their stalagmitic incrustation. But the constancy of the leading characters of their association, as found from time to time, rendered it also manifest that the whole belonged to one series. The main peculiarity was this: that while, with few exceptions—though these were very important—the rocks are those still found in Devon, the great majority do not occur at present *in situ* in the watersheds, not merely of the Plym or Tavy, but of either of the rivers of South-west Devon. Hence we have indicated an enormous change in the physical conditions of the county.

“The constituents in order of relative numerical importance were as follows: Flint Pebbles, forty per cent.; Schorl Rock, compact to crystalline, mostly subangular, thirteen per cent.; Limestone Pebbles, ten per cent., including examples (one each) of Lias, Cherty Carboniferous, and Cretaceous Freestone like that of Beer; Grits and Quartzites, ten per cent., the former predominating; Quartz Veinstone Pebbles, nine per cent. These make up eighty-two per cent. of the entire total. The remaining eighteen per cent. was drawn

from much more varied sources, and represented at least seventeen different rock species, the majority by individual examples, while only one contributed over two per cent. of the gross total. Both sedimentary and igneous rocks occurred, the former including altered varieties. Hard Slate of various kinds supplied two per cent.; Chert, resembling that of the Carboniferous series on the north of Dartmoor, two per cent.; while Lydian-Stone, Quartz-Schist, and Hornblende-Schist each gave one example.

"The Quartz-Schist might almost be described as a Schistose-Quartzite, but for an impersistent linear arrangement of delicate needles, apparently of schorl. The Hornblende-Schist precisely resembled that of Wapsworthy, on the Tavy, four miles north-east of Tavistock.

"This brings us to the rocks of direct igneous origin or association, which made a total muster of thirteen per cent.

"Although the drift of the material was so plainly from the direction of Dartmoor, only seven examples of this section represented existing Dartmoor rocks, and not one was a typical granite. These were (*a*) cream-coloured granular Elvan; (*b*) red-brown porphyritic Elvan, the felspathic matrix enclosing blebs of quartz and imperfect felspar crystals; (*c*) Schorlaceous-Pegmatite; (*d*) fine-grained Granitoid rock, with black mica and porphyritic quartz; (*e*) coarser-grained rock of similar type, but nearer to Granite; (*f*) coarse-grained Schorlaceous Granite (2). All these pebbles were small. *C*, *d*, *e*, and *f* represent varieties (like the schorl rocks) associated with the granitic apophyses of the Moor.

"Other distinctly identifiable rocks of the series, ranging from one example up to one per cent., were:

"Devonian compact Lavas of the ordinary type. Diabase, resembling that of Rock and Estover. Gabbro or Epidiorite (of a type which does not occur at present nearer than Cocks Tor, beyond Tavistock), with one example practically indistinguishable from a form occurring at Houndall, near Cornwood. A pebble of Triassic Trap (mica-porphyrite or andesite), resembling that on the west of Plymouth Sound.

"The remaining rocks were of great interest. They are entirely new to the district, and comprise examples of typical Andesite, indistinguishable from that of the Andes, and highly altered Volcanic Breccias or tuffs, now exceedingly hard siliceous pebbles. Professor Bonney, F.R.S., kindly examined sections of these for me, and his reports are so valuable that I append them. He notes of the Volcanic Conglomerate that it is one of the most interesting rocks he has ever seen.

"Grey variety of Andesite.—'Belonging to the first stage of consolidation are: (1) Numerous crystals of plagioclase, labradorite or perhaps partly andesite [Professor Bonney had not time in these examinations to make minute measurements]; sometimes corroded, but often with well-defined crystal outlines, exhibiting not seldom fine zoning; the inner part with enclosures of glass, &c. In one or two cases it seems clear that an original corroded grain has been subsequently augmented. (2) A pyroxene; some may be augite, but much of it gives the straight extinction and the dichroism of a variety of hypersthene. (3) Grains of iron oxide; in some cases, I think, hematite. Ground mass a clear glass, containing numerous microliths of felspar (plagioclase), a pyroxene, and some opacite. The rock is a Hypersthene-Andesite.'

"Dark variety of Andesite.—'Belonging to the first stage of consolidation are: (1) Numerous crystals of plagioclase, labradorite probably, sometimes corroded at the edges, commonly with glass enclosures, &c. (2) A few grains, generally without well-defined crystal angles, of augite; possibly a rhombic pyroxene is present. (3) Some grains of iron oxide, probably magnetite. (4) Some roundish grains, almost opaque, sometimes dark brown, showing aggregate structure, probably a hydrous-ferruginous mineral replacing some other, possibly a ferruginous-pyroxene, or an olivine. Ground mass apparently a glass, crowded with opacite, tiny lath-shaped crystals of plagioclase, and perhaps augite granules. I cannot identify any olivine. Structure and general aspect would lead me to regard the rock rather as an Augite-Andesite than a Basalt; but I suspect it is near the border line.'

"Volcanic Grit.—'The rock is composed of more or less rounded fragments, cemented by a little "paste," which is probably quartz, sometimes clear and chalcedonic, sometimes crowded with dust-like particles. Some of the fragments are felspar, fairly irregular in outline, in part at least plagioclase. One or two may be quartz; one or two are a kind of viridite, probably replacing a pyroxenic mineral; and one small grain resembles epidote. The rock fragments are all, so far as I can see, of igneous origin. Some are fairly clear, some a rich brown colour, some almost black with opacite; some are homogeneous, except for a little opacite and some belonites or trichites of a dark grey colour, which often are grouped in more or less dendritic forms or bundles like rootlets. A few of these grains are still isotropic, but most of those which are transparent exhibit devitrification structure. Small spherulites, showing the black cross with the two nicols, are rather common; one fragment seems part of a large spherulite. Other fragments show flow-structure; one is perlitic. Clearly several varieties of rock are present, but I think the majority may be referred to andesites, some of which may not be far removed from basalt; others may have a tolerably high percentage of silica. I think

the materials have undergone attrition, and have been deposited by water, but believe they have been obtained by the denudation of volcanic cones.'

"The main object of the present note is to record the facts so far ascertained; but I may add that the conclusion from these facts, borne in upon my mind, is that we have here the relics of a very early stage of Dartmoor denudation, when there still remained a large quantity of covering rocks to be removed from the granite of the southern and western flanks of the Moor. Whether that denudation was glacial or not I express no opinion; but that it was post-Cretaceous is proved by the presence of the flints. And they prove, moreover, that during the formation of the Chalk a considerable portion of Dartmoor must have been beneath the waters of the Cretaceous sea. The discovery of new local volcanic acidic rocks is to me also full of interest, in its bearing on the existence of volcanic activities in the Dartmoor area. (R. N. WORTH.)"

IV. SEISMOLOGY.

EARTHQUAKE SHOCKS, MAY 30TH, 1889.

"The signalman—Rice—on night duty in the London and South-Western signal-box at Cowley Bridge, near Exeter, states that at 8.21 p.m., May 30th, 1889, when sitting with his back against the box, he distinctly felt the structure quiver almost as if a train were passing; but there was no train near.

"Mr. William Radford, of Sidmouth, says he distinctly felt a slight shock the same evening, lasting about three seconds, the time by his watch being seventeen minutes past eight. It was sufficient to cause the lamp-shade to sway to and fro, and the glass on the side-table to jingle.

"At Exeter Mrs. and Miss Buckingham were sitting in the drawing-room upstairs on Southernhay, Exeter, and distinctly felt the chairs on which they were sitting rock, and also heard a noise they could not account for in the passage outside at the same time, and went out to see what it was, but saw nothing.

"My wife and myself were sitting in one of our rooms on the ground-floor, and all at once we heard a door slam. I said, 'What can that be? there is no wind' (it was quite still). In another second we heard it again, and then a noise on the stairs and overhead, so much like someone going up the stairs into our bedroom that I was persuaded it was someone, and went up to see. It did not occur to me at the time, as we

felt no motion, that it was an earthquake, until I saw the accounts from Guernsey, and places along the south coast of England. Comparing the time at which it was felt, the noise we heard corresponded. My wife says she distinctly heard a rumbling sound, apparently outside the house. From the slamming of the door twice I conclude that there must have been two waves of motion, although we did not feel it. (EDWARD PARFITT.)”

V. NUMISMATICAL.

COINS FOUND AT TEIGNMOUTH.

“The following coins have been found during the past twelve months in Teignmouth :

“1. A gold quarter noble of Henry VI., in excellent preservation.

“Obv. ‘HENRIC. DI. GRA. REX. ANGL.’”

“Device: A shield, France and England quarterly in an octfoil.

“Rev. ‘EXALTABVR. IN. GLORIA.’

“Device: A floriated cross in an octfoil, a *fleur-de-lis* at the end of each arm, and a lion passant gardant in each space.

“This coin is distinguished from the quarter nobles of Henry IV. by the French lilies being triple instead of *semée*; and from those of Henry V. by its *fleur-de-lis* mint-mark. It is individually remarkable for the omission of the second T in ‘exaltabitur.’

“2. A broken silver penny of one of the early Edwards—I., II., or III.

“3. A quarter shilling of Charles I.

“Obv. ‘CAROLVS. DG. M.B. FR. ET. H. REX.’

“Device: The head of the king to left, III. on the right; the Welsh feathers on the left.

“Rev. ‘R. CHRISTO. AUSPICE. REGNO.’

“Device: The Royal Arms surmounted by the Welsh feathers.

“From the presence of the Welsh plume, and the mint-mark of the open book, this was probably coined at Aberystwith.

“4. A half groat of Charles I., much defaced; legend on reverse, ‘IVSTITIA. THRONVM. FIRMAT.’

"5. A thick brass coin, clipped to a circle—five-eighths of an inch in breadth, a tenth of an inch in thickness.

"Obv. 'CAROLVS . REX.'

"Device: Crowned head of king to left; a minute 2 under the bust.

"Rev. No legend.

"Device: A crown, with $\frac{x}{8}$ underneath.

"This seems to belong to the numerous family of siege pieces and their kin, and is apparently intended for a ten shilling token. Though clipped to shape, it is well struck.

"6. A small coin of Mary, probably a penny, found by a fisherman, did not pass into my hands.

"Numbers 1 and 2 were found in earth which had been carted to the Point, and were washed thereout by the high tides. (1) Found April 15th, 1889; (2) March, 1889. Numbers 3 and 4 were found in the floor of an old house in Landscore Road. Number 5 has been in the possession of the present owner forty years; but its origin is unknown. (J. J. OGILVIE EVANS.)"

"The following tokens are new to me:

CREDITON.

"1. Obv. 'IOHN . BODLY' = the Mercers' Arms.

"Rev. 'OF . CREDITON . 1665' = I.A.B.

HARTLAND.

"2. Obv. 'MARY . MOVNTEY' = the Mercers' Arms.

"Rev. 'OF . HARTLAND . 1667' = M.M.

HONITON.

"3. Obv. 'GEORGE . HVMPHREYE' = a horse.

"Rev. 'IN . HVNITON . 1666' = G.I.H.

OTTERY ST. MARY.

"4. Obv. 'IOHN . MENNACK . IN' = a horse.

"Rev. 'S . MARY . OTRY . 1669' = HIS HALF PENY ^{M.} I.A.

"Numbers 1, 2, 3 were issued as farthings.

"These are in the collection of Major B. Lowsley, C.E., Limerick. (HENRY S. GILL.)"

ROMAN COINS AT PLYMOUTH.

"I am indebted to Mr. W. Lewin for the details of a find of Roman coins made by him in 1888, in some loose earth in a space enclosed by the foundation-walls of a house in Prospect Street, Plymouth. Five in all were found, the largest number discovered at any one time within Plymouth limits. They are all in poor condition, and only one is capable of certain identification. This is a second brass Constantine, with head to right, and the letters 'CONSTANT' . . . on the obverse, the reverse being detrited and patinated. Another is probably a first brass of Nero, with head to right. A third is a first brass, with head to right, but undeterminable. A fourth is a second brass, with female head to right, suggesting Greek colonial character. The fifth is a third brass, wholly detrited.

"In May of this year a third brass Roman coin was found a little below the surface, in soil that in all probability had not been disturbed for centuries, on Staddon Heights, in the rear of Bovisand Fort. It is in remarkably good preservation. It bears on the obverse the bearded and crowned head of Victorinus, with the legend, 'IMP C VICTORINVS P F AVG;'" and on the reverse a figure of Peace, with the words 'PAX AVG.' The coin is a decidedly handsome one, and I have a Victorinus of which the head is evidently struck from the same die.

"About fifty Roman coins have been recorded for the Plymouth district, of which details of twenty-six are known. Ten are in my possession. (R. N. WORTH.)"

ELEVENTH REPORT OF
THE COMMITTEE ON DEVONSHIRE VERBAL
PROVINCIALISMS.

ELEVENTH REPORT of the Committee—consisting of Mr. J. S. Amery, Mr. G. Doe, Mr. F. T. Elworthy (Secretary), Mr. F. H. Firth, Mr. P. O. Hutchinson, Mr. P. Q. Karkeek, Dr. W. C. Lake, and Dr. Brushfield—for the purpose of noting and recording the existing use of any Verbal Provincialisms in Devonshire, in either written or spoken language, not included in the lists published in the Transactions of the Association.

Edited by F. T. ELWORTHY, Member of Council of the Philological Society.

(Read at Tavistock, July, 1889.)

THE large number of contributions to this, the Eleventh Report of your Committee, sufficiently testifies to the interest which continues to be taken in the subject. In consequence of the resolutions passed at Plympton, and acting upon the special request of your General Secretary, that the Report be as short as possible, the editor has very greatly curtailed both his own remarks and also the quotations from old and modern authors, which in years past he has been accustomed to add to the materials supplied by contributors. He has felt, moreover, that a large number of the words included in the present Report having been fully treated in a work recently published, it would be unnecessary to repeat in your *Transactions* that which may be readily found elsewhere. It may, however, be desirable to remind our contributors of the extreme importance of recording the present exact sound or pronunciation of the various words they hear; and once more attention is asked to the resolutions, especially that marked (E), "To give, in all cases requiring it, some well-known word with which the recorded provincialism rhymes."

This point is really more important, if our reports are to be of any scientific value, than even the words themselves. It is by a careful record of present pronunciation that evidence will be obtainable as to the practical development of various sounds in English speech, and thereby laws will be discovered capable of accounting for what otherwise would seem to be abnormal or exceptional. It is only by the study of numerous similar developments that laws can be induced by which, for instance, it can be shown why the noun *care* should make the adjective *chary*, or why words like *kitchen* and *chicken* should be the natural and direct descendants of *cycene* and *cicen*.

CONTRIBUTIONS.

Each provincialism is placed within inverted commas, and the whole contribution ends with the initials of the observer. All remarks following the initials are simply editorial.

The full address of each contributor is given below, and it must be fully understood that each is responsible only for the statements to which his or her name is appended :

- J. D. = Mrs. Robert Dymond, Exeter.
 F. T. E. = F. T. Elworthy, Foxdown, Wellington.
 N. E. = N. England, National School, Upton Pyne.
 S. B. G. = Rev. S. Baring Gould, Lew Trenchard.
 F. B. J. = Mrs. J. Rose Troup (late Miss James), Rockbeare, Exeter.
 J. S. N. = J. S. Neck, Moretonhampstead.
 P. T. P. = Rev. P. T. Pulman, Exeter.
 S. R. = Rev. S. Rundle, Jun., Godolphin, Helston.
 A. S. = A. Stansell, Taunton.
 R. N. W. = R. N. Worth, Plymouth.

"ALONG. Coachman from Bridestowe, aged 23, when asked when some event occurred, replied, 'It was along September month.'—January, 1888. F. B. J."

This common use, as applied to time, seems peculiar to the West, and implies "in the course of." It is quite usual to speak of anything being done "along in the winter," or other season, and rather conveys the idea of repeated or continuous action than of indefiniteness as to time.

"ANGLE-DOG = earth-worm. At Culmstock a farmer, native of Farwey, age about 45, speaking of loose straw on pasture, said, 'You'd be surprise how zoon th' angle-dogs 'll draw it down.'—April 12th, 1888. F. T. E."

Angle alone has long been used for worm in the West, though very commonly *twitch* or *dog* is added. No doubt this use is the result of a confusion between the hook (Anglo-Saxon, *anzel*) and the bait placed upon it; for although *anzeltwicca* was the name in Alfred's time, yet so early as the 10th century we read in the colloquy of Archbishop Alfric (Wright's *Vocabularies*, p. 93):

"Ic astigie min scyp and wyrpe max mine on ea, and
 Ascendo nauem, et pono retia mea in amne, et
 ancgil, uel æs ic wyrpe.
 hamum proicio."

From this it appears that the glossarist even then translated *hamus* both as hook (ancgil) and bait (æs).

At present, too, "fishing with an angle" is by more people understood to be fishing with a worm than what it really is—fishing with a hook.

"ASS'ARD (adv.) = assword, backwards. At Okehampton Station a horse was rather frightened at entering a horse-box; a porter who was assisting said, 'You 'ont get'n in, I tell 'ee, vore you've a-turn un roun' and a-shut'n in ass'ard.'—August, 1887. F. T. E."

"Since the above I heard a man say, 'Joe, I zim you d'an'le things all ass'ard-like, jis the very same's off all your vingers was thumbs.'—F. T. E."

See *W. Som. Word Book*, p. 32.

"BACK-ALONG = a while ago, or formerly. Coachman from Bridestowe, aged 23, speaking of someone who had been in the habit of calling constantly on a neighbour—"Back-along he used to go there two or three times a week."—January, 1888. F. B. J."

Compare Report, *Devon. Assoc.* 1887, p. 65.

The phrase scarcely means formerly—i.e., a long time ago; it rather implies a short but indefinite time past. See *along*.

"BEAUTY OF ABRAM = variation of the name of the potato called 'Beauty of Hebron.' 'I shall have a good few of they Beauty of Abram this year.'—F. B. J."

"BENDERD = a giant. 'Caught a rat in the trap last night—a proper benderd.' Marianne Balsdon, kitchenmaid.—1888. S. B. G."

Probably a corruption of *Benhadad* (?).

"BILLERY = to hollow like the biller or buller (? *Chaerophyllum sylvestre*, L.). Gardener, aged about 50, native of Clyst St. Mary, on bringing in some celery from a different trench, 'This celery is quite billery and pluffy. Don't you know what billery is? Why, there's a plant that grows hereabouts we call biller; it has a hollow stem.'—October, 1887. F. B. J."

Compare BULLERS, Seventh Report, *Devon. Assoc.* 1884.

Applied to any reed or rush-like plant.

Bolder or boulder, *Scirpus lacustris*—'the rush used for bottoming chairs.' (*Britten.*) Called *boulders* in Norfolk.

"BLARING = bellowing. Gardener as above—'The cows are blaring.'—February, 1888. F. B. J."

Did he not say *be blarin*? Dutch, *blaren*, to bellow.—See *New Eng. Dict.*; *W. Som. W. Book.*

"Calves, sheep, asses, and children all *blar* or *blare* in their several natural modes." *Forby.*

In the West only cattle and angry human asses are said to *blare*.

"BOLT = to sort or count. (? Is it connected with *bolt*, to sift 'bolted bread'?). Maid, 18, native of Rockbeare, 'I have bolted the clothes, ma'am,' meaning she had sorted them for the laundress. In constant use.—F. B. J."

No doubt this is a rare use of the word, in the sense of to sort or sift. The word ought to be spelt *boult* in modern English, but Johnson and others confounded it with *bolt*.—See *New Eng. Dict.*

"BOULDERING CLOUDS (rhymes with mouldering) = storm-clouds. Gardener as above, "Great bouldering clouds, such as we have with a thunderstorm."—April, 1888.

"Are not these sometimes called 'thunderbeads in Somerset'?—F. B. J."

Never heard *bouldering* or *thunderbeads* in Somerset.—Ed. Compare BOLDERY, Seventh Report, *Devon Assoc.* 1884.

"BROWSING = trimming hedges. (Is *browse* connected with *brush* = wood?). Coachman-gardener at Plymtree, about 50 years old, pointing to a man trimming a hedge, said, 'They call that browsing;' and said the little bundles of twigs were called 'nickies.' See *Vraith.*—November, 1886. F. B. J."

See *W. Som. Word Book.*

Littre connects this very distinctly with *brush-wood*. He

gives: "*Brosse*. Buisson qui, bordant un bois, le defend des vents et des bestiaux."

"*Brosser*. Terme de chasse. On dit que le cerf brosse quand on l'entend marcher dans les bois.

"*Brousser*. Terme de chasse. Marcher à travers bois sans suivre les chemins."

So we say, "The hounds brushed through the covert."

Hence also we *browse* or *brouse* when we cut the *brosse* or *brousse*.

This old West-country word is no doubt a legacy of our French ancestors.

"BUG-BLINDING FOR WHITEWASHING. 'Where are you going?' addressed in one of the Plymouth streets by one workman to another, carrying a pail of whitewash and a brush. 'Bug-blinding.' Overheard in passing by R. N. W."

"BUNT—to hurt with horns. 'Do not let the cow bunt you.'—September, 1887. N. E."

"BY ALL REASON. Coachman, born at Bridestowe, aged 23, said of someone who missed a train, 'He ought to have been there in time, by all reason.'—April, 1888. F. B. J."

"CABBY=soft. 'A proper cabby day.' 'What do you mean by cabby, Dick?' 'Well, sir, I reckon it be a zamzeddy sort o' weather.' Richard Pengelly, keeper, Lew Trenchard.—1888. S. B. G."

The word signifies sticky, adhesive; hence muddy.

"CAUCH=mixture. 'This food is awful cauch.'—September, 1887. N. E."

This means poultice or plaster to be applied medicinally; hence used to express nasty.

In the *Ex. Scold.* the word *caucheries* is twice used (ll 183–243), but the form is now, I think, nearly obsolete in Devon and Somerset.

"CLOB=clod. 'I yenned away my thimmel in a clob.' September 19th, 1887. N. E."

"CLOME=earthenware. A tradesman residing at Moreton-hampstead, age about 25, said, 'She has opened a clome-shop.'—March 17th, 1888. J. S. N."

The usual word in Devon and Somerset.—See *Cloamen*, Third Report, *Dev. Assoc.* 1879.

"Now, Zester Nan, by this yow see,
What sort of vokes gert People be.
What's *cheny* thoft is *clome*."

P. Pindar, *Royal Visit to Exeter*, Postscript.

"COME TO DEATH-BED. Maid, native of Rockbeare, aged 18, speaking of a man who formerly called at the door to sell 'cloam,' 'He's very (h)ill; they say he's come to death-bed.'—April 29th, 1888. F. B. J."

"COW-FLOP OATS. The gardener informs me that you can see cow-flop oats advertised in the papers. Probably they are so called from their resemblance to cow-flops or foxglove.—F. B. J."

See Seventh Report, *Devon. Assoc.* 1884.

"CLARIENT = slight-grown. A native of St. Marychurch, aged about 70, spoke of a 'clarient' young man, also of a 'clarient' grown stick.—October, 1887. J. D."

This is a very interesting survival of the French *clair* or *clairement* in the same sense as we say *clean*. A "clean-grown young fellow."

Littre has: *Clair* = net, aigu.

"Que nous perdous clere Espagne la bele."—*Chans. de Roland*.

Also in the common French *simile*—

"Claire comme un bassin, nette comme un denier."

"CLICQUER = the tongue. In a local poem:

'Or he'd better sit down and keep still his old clicquer,

For we shan't go to — one moment the quicker.'

Explained to me as meaning tongue. January, 1888. F. B. J."

Very common. From the *clicker* or *clapper* of a mill, which keeps up a constant noise.

"CREAM = chill. CREAMY = chilly. Gardener, 'I am all of a cream.'—December, 1887.

"Coachman from Bridestowe, 'It gets cold and creamy after noon.'

"Compare 'shrammed' with 'cold' (Wiltshire dialect), also 'scrammed.'—December, 1887. F. B. J."

Very common. See *W. Som. Word Book*.

"CREEMED = shivered. A retired tradesman, a native of Moretonhampstead, age about 60, said, 'I'm creemed all over.'—January 5th, 1888. J. S. N."

"TO CRIM UP = to shrivell. 'I be reg'lar crimmed wi' cold.' Marianne Spry, widow, Lew Trenchard.—1888. S. B. G."

"CREAM = to hold tight, to squeeze. Coachman from Bridestowe, 'You must cream the reins between your fingers like that, miss.'—May, 1888. F. B. J."

Probably cramp, but no clew to the pronunciation is given.

"CROW-STICKS = bits of branches such as crows use for nests. Maid, native of Rockbeare, aged 18, 'I can light the fire easy this morning, for I have a nice lot of crow-sticks.'—February, 1888. F. B. J."

"CLOICHY = sticky. 'T'es rayther a cloichy sort o' a pudding' (i.e. tapioca). Marianne Balsdon.—1888. S. B. G."

"CLOVEL = head of a fireplace (o' long, as in stove). 'The clovel was of wood, and ketched fire.' William White, mason, Lew Down.—1888. S. B. G."

This is the same word as *clavel* (see *Fourth Rep. Devon. Assoc.* 1881), pronounced with a broad *a* in East Devon and Somerset, which is the true old sound; but it is interesting to note that in North-west Devon it has developed into long *o*, just as *strome* (*q. v.*), used by the same speaker, has sprung from *strame*. Is this the usual pronunciation of the district, or only a personal equation?

"COOCHY = left-handed. A child here is described as coochy when he uses his left hand instead of his right, and the gardener says he never heard it used in the sense of awkward.—F. B. J."

Compare Reports, *Devon. Assoc.* 1877-1887.

"DAVERED = faded. 'I reckon they drunkards will look davered till you put them in water.' Marianne Spry.—1888. S. B. G."

Hal., Jago, Cornish Dict.

"DERN = a door jamb. 'I reckon us had better rescarf the voot o' the dern, where her be a-ratted.' S. Dawe, carpenter, Lew Down.—1888. S. B. G."

The term is applied to a solid door-frame, not to what are called "linings" or "jambs."

Hal. "dorns." *W. Som. Word Book*, "durns." *Jago, Cornish Dict.*

"For making three *durneys* of freestone for three doors."
—*Historical MS. Commission*, p. 289.

"DIBBY = small. A girl living at Moretonhampstead, age about 10, speaking of an apple, said, 'What a little dibby one!'—October 12th, 1887. J. S. N."

"DISCOOSE = bad language, cursing, swearing. A farmer, aged about 70, long resident in Culmstock parish, speaking of the gross and abusive language of a well-known female character, said, 'I never didn year no such discoose vrom nobody's I've a-year'd vrom her.'—September, 1888. F. T. E."

See Third and Tenth Report, *Devon. Assoc.* The above is different from either.

"DOUT = put out. Conversation between two natives of Rockbeare as repeated by our maid, also a native of Rockbeare. 'Oh, mother, there's a big fire in my room; come up and dout it!' 'Dout it yourself, child,' replied his mother. The child could not 'dout' it, so the cottage was burnt to the ground.—December, 1887. F. B. J."

Applied to fire or lights only; *lit.* 'to do out.' Common everywhere.

See *W. Som. Word Book*.

"DREXIL = threshold. 'Her vall'd right across the drexil.' Marianne Balsdon, kitchen-maid, Lew Trenchard.—1888. S.B.G."

"DRUXEL = druckstool = threshold. Told me by the gardener. Compare Seventh Report, *Devon. Assoc.* 1884.—F. B. J."

A natural contraction of druck-stool, which in turn is a Western development of Old English *þreacwold*. *Thr* of *lit.* English is always *dr* in Devon and Somerset. Compare *drash*, *drish*, *drow*, &c.; *hous'lbread*, the common form of *household*. The literary *threshold* is an instance of the dropping of *w* in polite speech, like our West-Country 'ool, 'ood.

Wright's *Vocabularies*, *Limen*, *þerscwold*, p. 280; *þreawold*, p. 335; *þereswold*, p. 435; *þreoxwold*, p. 551; *Thresfolde*, p. 592; *Thriswold*, p. 667; *Thryswold*, p. 733.

"DROW = to throw (refl. verb). Used in speaking of horses or greyhounds, to express their peculiar bound. At Tiverton races a farmer, upon seeing Lord Palmerston's horse canter past the grand stand, said, 'Lord, how her drowth herzel.'—1860. A. S."

"DROW. Rhymes with how. 'The land is all drowed up.'—September 19th, 1887. N. E."

Old form, from which we have survivals in *drought* and *drowth*. See *dryth*.

"Ac comunliche connynge and vnkynde rychesse,
Drowep vp dowel and distruyep dobest."

Piers Plowman, xv. 19.

"DRING = to squeeze. 'I shall dring you sitting so close.' Used by a native of Honiton, aged 35.—March, 1888. J. D."

Compare First and Seventh Report, *Devon. Assoc.* See *W. Som. Word Book*.

"DRUNKARDS = marsh-marigolds. 'I reckon they drunkards will look davered till you put them in water.' See *davered*.—1888. S. B. G."

See "Devon Plant Names," *Devon. Assoc.* 1882.

"DRYTH = drought. Gardener of Rockbeare, 'Everything is killed along of the dryth.' A villager used the form 'dry' in the same sense, but I made no note of the sentence.—August, 1887. F. B. J."

Old form, still very common. Many nouns are made from adjectives and verbs by the addition of *th*. Compare *highth*, *blowth*, *greenth* (Geo. Eliot), and, commonest of all, *wealth*.

"EVERY WHIPS NOW AND THEN = from time to time, occasionally. Used by a woman from Beer.—February 20th, 1885. J. D."

"FAVOURED = relieved, helped. 'She favoured me fine all through the winter.' Used by a native of St. Marychurch, aged 50.—March, 1888. J. D."

This is precisely the sense of Fr. *favoriser*; i.e., to aid, to assist. "C'est trop favoriser un tyran, qui ou outrage."—Littré, *Racine*.

So we adjust harness to *favour* the weaker horse, &c.

"FLAKES = hurdles. Advertisement in the *Devon and Exeter Gazette*, June 8th, 1889. 'Wanted, several dozen wattled hurdles, locally called "flakes."—Apply to W. Thorn, Chagford.' See *Hallivell*.

"In connection with this I would mention a word common on the New England sea-coast; *i.e.*, *fish-flakes*. These are rough wattled frames, like hurdles, supported on sticks, usually at an angle of 45°, and used to dry fish on.—F. B. J."

"FLICKTAILS = fine clouds, something like those known as 'mares' tails.' Coachman, of Rockbeare, called my attention to the clouds. 'We call they clouds flicktails.'—August, 1887. F. B. J."

"FLISKING = driving, beating (of rain). 'The wind got up east, and sent us a flisking rain.' Marianne Spry.—1888. S. B. G."

To flisk is to sprinkle with fine spray; hence a flisking rain is a fine drizzling rain, possibly driving, but not a regular downpour.

"FLOP-A-DOCK = foxglove. 'The flop-a-docks be growing amazin' plentiful.' Marianne Spry.—1888. S. B. G."

Compare "Devon Plant Names," *Devon. Assoc.* 1882. See "flapdock," *W. Som. Word Book*.

"FORM = describe (?) or imagine (?). Coachman at Rockbeare. 'Well, I can't form what she looked like,' he said, when I asked him how Miss —— looked in hunting costume. The gardener used the term in a similar sense.—November, 1887. F. B. J."

This use is precisely equivalent to the common "tell" or "say," and is used in French in the same sense. Littré, *former*, faire entendre. "J'en tirai cette conséquence, sur laquelle il ne forma mot."—D'Argenson, *Mém.* t. iii. p. 44.

"FRAWZY = treat. A girl, about 15 years of age, living in the parish of North Bovey, said, 'We are going to have a frawzy to-night.'—March 16th, 1888. J. S. N."

"FRIGHTENED = surprised. Gardener, when asked if he knew the word: 'I have oftener heard people say, "I'm frightened to see you here," when they meant surprised.' Compare Tenth *Report of Devon. Assoc.* 1887, p. 68. F. B. J."

Very common in Devon and Somerset.

"FUDDELEY = intoxicated. I asked the gardener if he knew the phrase, 'All mops and brooms' for intoxicated. 'No, never,' he replied. 'We call that fuddleley.' Compare 'fuddled.'—January, 1888. F. B. J."

Very common. See *W. Som. Word Book*.

"GALLED = frightened. 'Did I gally you?' 'Not likely; I live too near the 'ood to be frightened by owls.' Upton Pyne.—September, 1887. N. E."

See *W. Som. Word Book*.

"GOING ROUND MY HAT = going round Robin Hood's barn, or a roundabout way. Coachman at Rockbeare had a road to a certain place described to him. 'Why, that's going all round my hat.'—May, 1888. F. B. J."

"GRACIE DAISIES or GREASY DAISIES = daffodils. (?) Grâce à Dieu = thanks to God [for return of spring ?]."

W. Som. Word Book.

Britten, Hal., Wright, call this "gracy day," which is nearer to the probable meaning; i.e., day of grace, Easter. The other common names of this flower, Lent Lily—Lent Rose—seem to point to its season of bloom. The insertion of the *y* sound after *grace* is precisely similar to "flappy-dock," "Dartymoor," &c., and is mere euphony.

"GUCH-GUCH = cuckoo. 'I heard the guch-guch yesterday.' Richard Palmer, farmer, Maristowe.—1888. S. B. G."

Cuckoo is always sounded as if spelt guckoo, but the above seems quite new.

"HAG = haggard. 'She looks very hag since her trouble.' Used by a native of South Devon, aged about 50.—March, 1888. J. D."

"HALF-ENOUGH. 'They say Bradninch bells are half-enough more than Thorverton bells.' I could not learn the exact meaning of the expression. Authority—carpenter (45), resident at Stockleigh Pomeroy, born at Thorverton.—May, 1886. S. R."

"HAPE = to check, to balk, to keep back; rhymes with *tape*. A farmer at Culmstock, native of Farway, age about 45, speaking of some encroaching neighbours, said, 'They'd have it all, nif did'n hape 'em a bit.'—October 16th, 1888. F. T. E."

See *Ex. Scold.* l. 51.

"HOOD-WALL = woodpecker. 'When you hears the hood-wall calling, it's a sign of rain.' W. Pengelly, hind, Lew Down.—1888. S. B. G."

See "wood waul," Tenth Report, *Devon. Assoc.* 1887.

"HILF = halft of an axe. 'There now, the hilf be a-brokt.' W. White.—1888. S. B. G."

True Old English name, though less common than *haft* or *heft*. Wright's *Vocab.* "*Manubrium*, hæft and helfe," p. 142.

"HEABLE = pitchfork. 'Where be my heable to?' Matthew Crossman, gardener, Lew Down.—1888. S. B. G."

Hal., "heavle, a dung-fork; *Hereford.*"

"HAND-OCK = square board for plaster, when plastering walls or ceiling. 'What do you call that, William?' 'Han'-ock, your honour.' W. White, mason, Lew Down.—1888. S. B. G."

This is probably *hand-oak*; that is, board for the hand.

"HECHAMALL = a blue tomtit. 'Lots o' hechamalls in the moway.' W. Pengelly.—1888. S. B. G."

See "hackmal," *W. Som. Word Book*.

"From the strong pecks which it deals with its bill are derived the names (all used in Devon and Cornwall) hickmall, hackmall, heckymal, hagma, hackeymal."—Swainson, *Prov. Names of British Birds*, p. 34.

"HECKANODDY = a blue tomtit. 'What is the name of that bird?' 'Folks du ca' n a heckanoddy.' H. Gale, Lew Down.—1888. S. B. G."

"HORCH = to hurt with horns. 'The cow horched John.'—September, 1887. N. E."

This does not necessarily mean to *hurt*, but to gore or push with the horns. It is quite common to hear, "The bullocks be *horchin'* about, we be gwain t'have rain," when they push or butt each other with their heads.—See *W. Som. Word Book*.

"JACOB = a silly fellow. Having assumed the pseudonym of Frank Jacob, I was told that this was unfortunate, as Jacob was a synonym for a silly fellow. My informant was a maid who had lived much in Exeter, but was of Cornish

birth, and was confirmed as Devonian by our gardener. Surely I builded better than I knew.—April, 1888. F. B. J.”

Rather the contrary, on the principle of “*lucus a non lucendo*.”

“JOANIE = a small figure of china. ‘Please, ma’m, very sorry, in dusting I’ve knacked off one of the joanies from the chimneypiece.’ Ellen Pengelly, housemaid, Lew Trenchard.—1888. S. B. G.”

Compare JOAN-IN-THE-WAD = Jack-a-lantern.

“LAUGH AND JELLAUGHTER = name of a common cottage-garden flower, something like a single stock.—F. B. J.”

This should be identified—is it *Hesperis matronalis*?

“LEERY = empty. ‘I reckon the cider barrel be almost leery.’ W. Pengelly.—1888. S. B. G.”

Very common. See *W. Som. Word Book*. Germ. *leer*.

“LEW-SIDE = lee-side. ‘Get the lew-side of the hayrick.’ September, 1887. N. E.”

Very common. Compare LEW’T, Tenth Report, *Devon. Assoc.* 1887.

“LISSOMLY = easily. ‘A little oil will make the lawnmower work lissomly.’ Thomas Adams, gardener, Lew Trenchard.—1888. S. B. G.”

“LONG-CRIPPLE = snake. When I asked the gardener if he ever heard the expression, ‘So spaggetty as a long-cripple,’ he exclaimed, ‘Long-cripple, why, that’s our snake!’—October, 1887. F. B. J.”

“LONG-SOFT-FAMILY = a large family of young children. Gardener speaking of a villager, ‘She deserves help, for she has a long-soft-family.’—December, 1887. F. B. J.”

Long family is the usual idiom throughout the West. See *W. Som. Word Book*.

“MAWN = a kind of basket. I said to the gardener, ‘That basket will do.’ He replied, ‘I’ll get a basket, miss.’ ‘Is not that a basket?’ ‘No, miss, that’s a mawn.’ The gardener says a mawn is like a flasket, only of coarser material.—1888. F. B. J.”

Well known in the West, and very frequently made to hold a certain quantity, as a *half-bag-mawn*, which holds a bushel and half. This word is spelt with a final *d* in old authors. See *W. Som. Word Book*.

Maundy Thursday, *ievuedy absolv*; Palsgrave.

Holy Thursday is said to be called *Maundy*, from the maunds or open baskets which contained the loaves doled out on that day, but really is so called from the *Mandatum*, performed on that day; *i.e.* to wash disciples' feet.

"MALL. 'Us must knack down they cobblestones wi' a mall to pave the stable wi' un.' William White, mason, Lew Trenchard.—1888. S. B. G."

Compare "pall mall," now politely called "pell mell." Not a dialect word, but admitted to show pronunciation.

"MELL = to mix. 'Us mell up one bushel o' lime to two o' sand.' W. White.—1888. S. B. G."

This is clearly a pronunciation of the old *medle*, like *nee'l* for *needle*, *an'l* for *handle*, &c.

MEDLE, colour, *mixtura*. MEDLYN, or mengyn, *mixed*.—*Prompt. Parv.*

"MOOT = root of a tree. Butler, native of Cornwall, but has lived long in Exeter, age 28, 'They are digging out a great moot in the lawn.'—November, 1887. F. B. J."

See *W. Som. Word Book*.

Moot is the entire root—*i.e.*, all that is left in the ground when a tree is felled—and includes all the mores or rootlets. See MORES, Tenth Report, *Devon. Assoc.* 1887.

"MOWDERIN (first syllable rhymes with *cow*) = moulting. Farmer at Culmstock, aged about 40, speaking of eggs being scarce, said, 'My hens be all mowderin.'—October 23rd, 1888. F. T. E."

"MUCKY = muddy. A farmer's wife, a native of Throwleigh, age about 70, said, 'I reckon 'tis mucky again now.'—January 23rd, 1888. J. S. N."

"MOUNTING-STOCK = horse-block. Gardener tells me this is common. Compare LIFTING-STOCK and LEAPING-STOCK, Report of *Devon. Assoc.* 1877. F. B. J."

Called *uppin-stock* in Somerset.

"NATURE = describing weakness, or want of life. 'Her'd got no nature in her,' speaking of a girl who was very weak. Used by a native of South Devon, aged about 50.—March, 1888. Used also of grass that is poor. 'There's no nature in it.' Native of Clyst St. Lawrence.—May, 1888. J. D."

Very common. The word really implies *strength* or power. See *W. Som. Word Book*.

"PADLOG = a putlog. 'How many padlogs hav'y got for the scaffolding?' W. White.—1888. S. B. G."

Called *padlock* in Somerset. See *W. Som. Word Book*.

"PAKESING = treading. A small farmer, residing near Moretonhampstead, a native of Chagford, age about 66, said, 'How those bullocks have been pakesing about!'—January 8th, 1888. J. S. N."

"PANNEL or PANN'L = to pain or hurt. A native of Exeter, speaking of a man crippled with rheumatism, said, 'T was a pann'l to him to get up. It pann'led him to walk.'—April, 1888. J. D."

"PARSON IN THE PULPIT. Common name for *arum maculatum* (lords and ladies). Used by native of Honiton.—May, 1888. J. D."

Common everywhere. See *W. Som. Word Book*. *Britten, Prior*.

"PATHFIELD = field-path. Gardener telling the story of a pedlar who was murdered. 'His ghost sits on the stile down by the pathfield.'—January, 1888. F. B. J."

Pathfield usually means "field with a path through it."

"PHIZGIE = pickaxe. 'Go and fetch me a phizgie.' James Middleton, mason's man, Lew Down.—1888. S. B. G."

This is our old friend *bisgy* in a new guise; *b* and *f* sounds are very commonly interchangeable. Compare BLANKS and VLANKS.

Besague, a (double-tongued) mattock.—*Cotgrave*.

"PIT = well. A builder, aged about 45, long resident at Burlescombe, wrote, 'I have let the pit rest for a few days, as the foul air is in it very bad.'—August 24th, 1887. F. T. E."

Often called *plump-pit*. See *W. Som. Word Book*.

"PLUGS or LUGS = logs. Gardener at Rockbeare, 'I'll put up some plugs there to keep them from driving on the soft gravel.' The plugs used were sections of the trunk of a large tree; they were about two feet high.—January 14th, 1888. F. B. J."

Did he say *plugs* or *lugs*? The latter is the common pronunciation of *logs*.

Compare DUG, LONG-DUG, KNUB. See Fifth Report, *Devon. Assoc.* 1882.

"PLUM. 'Plum weather, sir.' Labourer, about 40, Upton Pyne.—September, 1887. P. T. P."

The word seems to mean *nice, pleasant*. See Fifth, Sixth, and Eighth Report, *Devon. Assoc.*

"POT = stomach, inside. Old woman at Hartland, keeper of a public-house, age about 70, sitting in the chimney-corner, in answer to enquiry as to her health, said, 'Oh, I be bad in my pot! doo'ee closen the dooer.'—October, 1868. A. S."

"PROPERLY = completely, entirely, or really. Coachman from Bridestowe, aged 23, 'I *properly* forgot it when I was in Exeter.' Maid, native of Rockbeare, aged 18, 'When he was little he was *properly* ugly.'—Jan., 1888. F. B. J."

Compare PROPERLY COLD, Report, *Devon. Assoc.* 1881.

"RAIM = to stretch. An Exeter woman, aged about 40, said, 'See how the baby's *raiming* hisself.'—Sept., 1887. J. D." See *W. Som. Word Book*.

"RAMPING = raging. Gardener at Rockbeare, 'He was *ramping* with toothache? Raging like a lion rampant. Perhaps here the expression is common, as it is in America, to say 'a raging headache.'—F. B. J."

Compare Tenth Report, *Devon. Assoc.* 1877.

Very common. See *W. Som. Word Book*.

"RASH = rough. 'The sandpaper be hardly *rash* enough to get off the rist (rust).' Marianne Balsdon.—1888. S. B. G." This would be RONK in Somerset.

"RATCHER = one who reaches high. 'Why, what a *ratcher* you be!' An Exeter woman aged about 40.—Sept., 1887. J. D."

"RECKON = guess. Used in the true Yankee sense by our gardener. 'No, I *reckon* it won't rain to-day.'—February, 1888. F. B. J."

Almost too common to be considered provincial.

"REDS = red clouds at sunrise. Gardener at Rockbeare: 'The *reds* were out this morning, so we are sure to have rain.'—December, 1887. F. B. J."

Common everywhere.

"REWER = a kind of horse-rake, a hay collector, having long straight teeth. At Culmstock, farmer, native of Farway, aged about 45, speaking of getting in the hay left after loading, said, 'The *rewer*'s every bit so good's a rake;' and soon after, 'I'll warn the *rewer*'ll gather up every mote o' it.'—July 12th, 1888. F. T. E."

"RIPPING = bursting into leaf. Gardener at Rockbeare: 'The oaks are very late this year; they are only just *ripping*.'—May 28th, 1888. F. B. J."

They refers to the men, not the oaks.

"They be only just *ripping*" means that they are felling oaks, which is only done when the bark can be readily stripped off, which is called "*ripping*." The above sentence must have been misunderstood. *Ripping-time* is when oak bark can be readily stripped off. This only occurs when they are bursting into leaf from the rising of the sap. (See Fourth Report, *Devon. Assoc.* 1881.)

"ROUSEING AWAY (rhymes with bruising) = crumbling. Gardener: 'The hedge-bank was *rouseing* away.' Compare 'rougeing' and 'rushment,' Tenth Report, *Devon. Assoc.* 1877. F. B. J."

See "ruse," *W. Som. Word Book*.

"RUCKEY DOWN = to stoop. Term used by children when playing hide-and-seek. F. B. J."

Regular Old English word. See *W. Som. Word Book*.

"RUMMAGY MESS = untidy. A cottager, aged about 70, whose garden I photographed: 'It was in such a *rummagy* mess.'—May, 1888. F. B. J."

Very common in the West.

"SCALING = outer boards cut from a tree trunk. The same as *slobs*, used by the gardener at Rockbeare. F. B. J."

"SCLOUD = scratched. The gardener of his daughter: 'The cat *scloud* her all down the arm.'—April, 1888. F. B. J."

Compare SCLUM, Report, *Devon. Assoc.* 1877.

This is really *clawed*, always sounded *clowed*. Compare a *dung-clow*. The *s* is a very common prefix to *p* and *k* initial sounds, as in *scrawl* for *crawl*, *scraunch* for *crunch*, *scruple* for *crumple*. See SPIZE.

"SEVEN SLEEPER = dormouse. 'It's a *seven sleeper*, miss,' said the gardener of Rockbeare.' F. B. J."

Usual name. See *W. Som. Word Book*.

See ZEBM-SLAPER, Tenth Report, *Devon. Assoc.* 1887.

"SEX = a slater's chopper, with a point at the back for knocking the holes for the pins in the slates. 'I say, Bill, pass me up my *sex*, willy?' Arthur White, mason, Lew Trenchard.—1888. S. B. G."

Regular name for this tool. See *W. Som. Word Book*.

"SHODDIN o' WATER = crying, lamenting. At Culmstock a gamekeeper, age about 38, and a farmer talking together, said in my hearing:

"G. 'You 'ant a-zeed the old ——'s wive 's mornin', 'ave 'e? Her was shoddin o' water, sure 'nough!'

"F. 'Oh, brave! hot's op than?'

"G. 'I yeard 'em eens I went along, an' I thort they was quardlin'; but they wadn'. Her was shoddin o' water an' screechin', an' he was cussin' an' 'ollerin'. 'Twas a hell of a store, I can tell 'ee, 'cause they'd a-got a letter how the board 'ad a-put a shillin' a wik 'pon 'em vor t' 'elp maaintain he's father.'

"F. 'Well, then, be d——d if they 'ont be a-foous vor pay it.'—November 29th, 1888. F. T. E."

"SHOULD. Farmer of Culmstock, age about 60, said to me, 'Mr. —— come to me and zaid how you should zay how I had'n a-got no right there,' &c.—February 7th, 1889. F. T. E."

The use of the preteritive verb *should* is very common as a mark of oblique narration throughout the western counties; indeed, it may be taken as a thorough West-Country idiom.

"SKRUMP = shrivel. 'Apples picked in the wane o' the moon is sure to skrump up.' W. White.—1888. S. B. G."

Another instance of *s* prefixed. See SCLOUD, *ante*.

"SHUGG=shy. 'They make out to be so mortal shugg.' Man, 65, born at Cornwood, resident in Cornwall for the last sixteen years.—Heard 1885. S. R."

There was a final *g* in this word in old English, and appears to have been retained in Devon.

"SIMPLE=requiring simples. Coachman at Rockbeare, 'That horse had a bad fall. It's a jegged cut on his knee; a *simple* place, miss.' Then followed a description of the treatment required. Apparently the place needed some ointment of simples.—June 3, 1888. F. B. J."

"SKRIDDICK=a bit. Gardener at Rockbeare, 'I have no *skriddick* of it left.' Compare SKIDDICK, Tenth Report, *Devon. Assoc.* 1877. F. B. J."

See "*scridnick*," *W. Som. Word Book*.

"SLEEPING=decaying. Gardener at Rockbeare, 'I see that pear is *sleeping*'—decaying in the centre.—September 1, 1887. F. B. J."

"SLIPAGE=avalanche or caving in. Coachman at Rockbeare, 'He was killed by a *slipage* at the Quarry.'—May, 1888. F. B. J."

"SPAGGETY=spotted. See LONG-CRIPPLE.—F. B. J."
This is usually *sparkety* or *spickety*.

"SPARE=slow. Coachman at Rockbeare, on passing a donkey-cart on its way to the station, 'That's a *spare* coach to catch a fast train.'—April, 1888. F. B. J."
So we often speak of "*spare work*."

See *Ex. Scold.* l. 292.

"SPINE=turf. Gardener at Rockbeare, 'You can't grow a good *spine* under those trees.'—April 30th, 1888. F. B. J."
See Seventh Report, *Devon. Assoc.* 1884.

"SPINE-GROUND=pasture. Gardener further explained that *spine-ground* meant pasture.—F. B. J."

"SPIT=to turn over with a spade. Gardener at Rockbeare, 'He sometimes comes up to *spit* the ground.'—Dec., 1887. F. B. J."

See *W. Som. Word Book*.

"SPIZE=to ooze. 'The cyder is spizing out o' the barrel.'—W. Pengelly. 1888. S. B. G."

This is the same as PEYSE, Seventh Report, *Devon. Assoc.* 1884, with the common prefix *s*. See SCLOUD, *ante*.

"STARING=bright, brilliant. Gardener at Rockbeare, 'I knew it would rain after such a *staring* morning.'—March, 1888. F. B. J."

"STEWERING=sucking. 'I caught my boy a-stewering at a 'bacca pipe 'tother day, and I fetched 'n a crack on the head.'—1888. S. B. G."

"STICKLE=steep. 'The roof is hardly *stickle* enough.'—W. White. 1888. S. B. G."

See *W. Som. Word Book*. Compare "Sticklepath."

"STIVERED OUT=stuck out. (Rhymes with *Shivered*.) Gardener at Rockbeare, 'The birds look big in winter with their feathers all *stivered out*.'—Jan., 1888. F. B. J."

This most expressive word is the only one in the language to convey the idea of hair, feathers, or any fibrous substance not lying smoothly. A dog when angered is said to "*stiver* up his busk," that is, to cause the hair on his back to stand straight up; hence, in a figurative sense, an irate man is said to "*stiver up*," in evident allusion to the dog's fighting attitude. See *Ex. Scold.* l. 311.

"STORE=stir, disturbance, row."

See SHODDEN O' WATER for illustration. This is quite another word from *store*, a story.

"STRAMMER=big. 'That lie is a *strammer*.'—Sept., 1887. N. E."

Often used for a lie, and seldom unless in that connection. See *Ex. Scold.* l. 174.

"STROME=streak. 'There's a strome in the sky that sez wind.' W. Pengelly. 'It wants two coats o' paint on the wall, or it's sure to look stromy.' W. White.—1888. S. B. G."

See CLOVEL, *ante*.

"STUGGED=stuck (rhymes with *nigged*). Coachman, of Rockbeare, when he had so many things to do, he did not know which way to go about them. 'I'm fairly *stugged*.'—October, 1887. F. B. J."

Compare Eighth Report, *Devon. Assoc.* 1885.

The above is a figurative use of the very common word, which signifies "stuck fast in the mud." See *stog*, *W. Som. Word Book*.

"SUCCOUR = to run under. 'Her hed a heable (pitchfork) up, and 'ud a done 'n an injury if her hedn't a succoured it, and took th' heable out of her hands.' Woman, of Sourton, before the magistrates at Lifton petty sessions."

Used in its true and original sense. Old Fr. *succurre*, Mod. Fr. *secourir*. "Succurra nous li reis od son barnet."—*Littre*, *Chans. de Roland*, lxxxii.

"SWADDLE = busk (?). 'Them wicked creeturs (i.e. the peacocks) hev been a swaddling in my garden.' Marianne Spry.—1888. S. B. G."

Surely this means "to dust," or, as is said, "to bathe."

"TAD = a quantity, a load, a burden. Rather implies large bulk, in distinction to its diminutive *taddick*. Farmer (see REWER) coming in with a very heavy load of hay, said, 'I've a-got a middlin' *tad* here, sure 'nough.'—July 14, 1888. F. T. E."

"TAFFETY = dainty, delicate. Used by a native of Honiton, aged 35. April, 1888. J. D."

Very common. See *W. Som. Word Book*.

"TANTERBOMING = crooked, out of place. Used by an old man at Churchstanton, who became very shy when questioned about it; but he admits that the word is in common use in Churchstanton and the neighbourhood. I first heard it from his son, who was in my employ about six or seven years since. He had fixed a stone in my garden, and I made him alter it, after which he said that 'it did not look so tanterboming,' meaning that it was not so much awry.—May, 1889. A. S."

"TILL = to prepare, to make ready, to set as a trap or snare. At Culmstock a farmer, age about 40, native of Farway, speaking of the sharp practice of some neighbours, said, 'But there, didn' make no odds, I was a-tilled vor 'em' (i.e., prepared for them).—November 22, 1887. F. T. E."

See *W. Som. Word Book*. A trap is always "tilled," not "set."

"TITTERY = finikin, small. 'I don't like the looks on't. It's too tittery to my thinking.' W. White, mason.—1888. S. B. G."

"TH. Shortened form of *eth*, used after a sibilant or liquid. Near the road to Clovelly I observed a man and a woman ploughing in a very primitive manner. The man stood at the back of the plough, to which a cord was attached, one end of which the woman held. The ploughing was done by a sort of jerking—the man pushing and the woman pulling simultaneously. The driver treated me with the following: 'You see when he pewsth her pewlth.'—About 1869. A. S."

"TRAW = trough. Gardener at Rockbeare: 'You'll find it by the *traw*, Willie.'—August, 1887. F. B. J."

Trow, rhymes with *know*, is the old pronunciation. The Devon form is the same as in *knaw* for *know*.

"TROWN = a hollow. 'The water be standing in the *trown*' (of the plough ridges). W. Pengelly.—1888. S. B. G."

This is evidently the plural of *trow*. The plural in *n* is becoming very rare except in Dorset.

"TRUCK-A-MUCK = a sort of trolley for carrying timber. 'Us mus' have the *truck-a-muck* to bring the granite from the yard.' W. White.—1888. S. B. G."

Probably a variation of *truckley mux*. See Tenth Report, *Devon Assoc.* 1887.

"TUCK UP = to short-coat = to put short dresses on a baby. Maid, native of Rockbeare, aged 20: 'Mother's going to the christening, and then she stays to *tuck up* the baby.'—December, 1887. F. B. J."

The usual phrase in the West. See *W. Som. Word Book*.

"TURMUTS = turnips. Gardener at Rockbeare: 'They call they *turmuts* here, miss.'—February, 1888. F. B. J."

Everywhere so called.

"TURN OFF = to spoil or become sour. Butler from Exeter, aged 28: 'I think the chutney's *turned off*, sir.'—December, 1887. F. B. J."

Very common.

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H

"UNDERMAN=to lower. Coachman at Rockbeare: 'I wouldn't *underman* myself like that.'—January, 1888. F. B. J."

To be mean, to degrade.

"UNKET. Old woman at Hartland (see POT), speaking of a wreck, in which the captain's daughter was killed by a loose block, said, 'T was tarrable wisht. Do make me veel *unket*.'—October, 1866. A. S."

"UPROSE=churched. Told me by Rev. Mr. Anstiss, of Ivybridge, to whom the question was addressed. 'Please, sir, can Mrs. Smith be *uprose* this afternoon.'—1888. F. B. J."

"VADY=damp. 'When the walls get *vady*, there's sure to be a change of weather.' Richard Horne, miller, Lew Trenchard.—1888. S. B. G."

See Third Report, *Devon. Assoc.* 1879. This disposes of Haliwell's *musty*.

"VALLACING=finishing. 'I reckon another load o' hellen (slate) chips'll do for *vallacing* the road.'—Richard Horne, miller, Lew Trenchard.—1888. S. B. G."

This is unquestionably *ballasting*; that is, in making a road to put porous material under the metal. *B* and *v* always interchangeable. See PHIZGIE.

"VANG=to earn. 'I hope to *vang* a shilling to-day.'—September, 1887. N. E."

See Eighth Report, *Devon. Assoc.* 1885. *W. Som. Word Book*.

Vang really means 'to seize,' 'to hold fast;' hence 'to take,' 'to receive.'

"*Fangyn*, or *latchyn*—*apprehendo*.

"*Vnder fongyn*—*suscipio*.

"*Latchyd*, or *fangyd*, or *hynt*, or *caw3t* (lahchid, or takyn), *fangyd* with handles, or other lyke. *Arreptus*."—*Prompt. Parv.*

"VELLARS=felloes. Gardener at Rockbeare: 'I had the wheel fresh *vellared*.'—January, 1888. F. B. J."

See *W. Som. Word Book*. Usual word.

"VITTY=tidy. 'Us must make the garden a bit vitty.'—R. Pengelly, keeper, Lew Trenchard. S. B. G."

Really 'neat,' 'proper.' See *W. Som. Word Book*.

"VLAX or VLEX—to take the fur off an animal, or to make the fur fly. Gardener at Rockbeare, repeating what another man said after he had shot at a rabbit: 'I know I hat un, for I *vlox* un.'—1888. F. B. J."

See Seventh Report, *Devon. Assoc.*, 1884.

The fur of hare or rabbit, when detached from the skin, is always called *flax* or *vlex*. Hence *vlex* or *veather*; i.e. ground or wing game.

"VOOR=furrow (rhymes with moor). Gardener at Rockbeare: 'He wor a-vollerin the zull along the *voor*.'—January, 1888. F. B. J."

The Old English word for furrow. See *W. Som. Word Book*.

"VOREHEAD or FOREHEAD. In ploughing a field about four yards of soil near the hedge is left unploughed till the centre is done; this is termed the forehead, head of the vooor or furrow, or four yards, the space left.—1888. F. B. J."

This is, of course, the vooor-head, or head of the furrow, where the horses or oxen turn.

"VRAITH (rhymes with wraith)=cutting brouse. Gardener at Rockbeare said, 'Black told me he must go *vraithing* to-morrow. He meant cutting brouse, miss.'—1888. F. B. J."

This means not cutting only, but rather *wreathing* or *watling*. The cutting is, of course, only part of the work.

See "vreath," *W. Som. Word Book*.

"WALKS=steps. Butler at Rockbeare: 'I've a been down to within a few *walks* of the station.'—April 2nd, 1888. F. B. J."

"WANT=a mole. 'I've a-ketcht a scoor o' *wants* in thicky mead.'—Richard Pengelly, gamekeeper, Lew Trenchard. 1888. S. B. G."

Old English name. See Trevisa, *De Hibernia*, vol. i. p. 339.

"WATERTABLE=ditch at the side of the road. Coachman at Rockbeare, 'How that horse do like to go in the *water-table*.'—Dec., 1887. F. B. J."

See *W. Som. Word Book*.

"WHITPOT=nonsense. Gardener at Rockbeare, 'Shut up with your old *whitpot*' (that is, "Stop your nonsense.") In

America whitpot was formerly common in the country, for a kind of porridge made of flour and milk. Is it connected with *wheat* flour?—Dec., 1887. F. B. J.”

Certainly not. Several receipts for making whitpot, a favourite dish of our ancestors, are given in *Notes and Gleanings*, Feb., 1889, p. 22.

“WHITSUN-GIRÁFLEUR (accent strong on á in girafleur). Probably corruption of the French giroflée-pink.—Cf. R. C. A. Prior's *Popular Names*, &c. Pink from Low German, and Flemish Pingst = Whitsunday; also familiar in the Pfingst Cantata.—F. B. J.”

Whitsun Gilawfurs are well-known flowers in cottage gardens. They are the double variety of *Hesperis matronalis*.

“WHITSUN-SUNDAYS = *Stellaria Holostea*, L. Coachman at Rockbeare, ‘We used to call they *Whitsun-sundays*, but some calls they snapjacks.’—April 27th, 1888. F. B. J.”

“WILLIS = a rill from a spring. ‘Us hev runned short o’ water in the well, so my wife hev had to fetch all the water from the *willis*.’ John Doidge, labourer, Lew Down.—1886. S. B. G.”

“WIPE YOUR SHOES. The gardener tells me that often when viewing a place, the man who shows it insists on actually *wiping your shoes* with his handkerchief, ‘then you are bound to give him some money for drink.’—F. B. J.”

Compare Tenth Report, *Devon. Assoc.* 1877. Common throughout the West.

“WODGES = wedges. Used by gardener at Rockbeare.—F. B. J.”

Always so pronounced.

YAWL, rhymes with bawl. Very broadly pronounced, as in “hold thy ba-al.” To bawl, to shout, to make a noise or disturbance.

“At Culmstock a farmer, native of Wellington, aged about 40, speaking of a certain sale, said, ‘T was the very same’s a bear garden. He [the auctioneer] couldn’ keep no order way ’em. There was th’ old H—— ya-alin’ and whoopin’, and th’ old W—— hollerin’ ’eens he [the auctioneer] couldn’ year hissel spake.’—December 20th, 1888. F. T. E.”

A real Old English word. Ang.-Sax. *galan*, to sing.

"Galyn, as crowys or rokys. *Crocito*."—*Prompt. Parv.*

"*Houaller*. To *yawl*, *wawl*, to cry out loud [to holloa, or halloo].

"*Mouaner*. To mawl, *yawl*, or cry like a little child.

"*Jappé*. Barked, *yawled*, bayed, bawled.

"*Jappement*. A barking, *yawling*, baying, bawling. [Devon, yapping.]

"*Japper*. To bark or bay like a dog, to *yawl*, to bawl."

Cotgrave.

"He mighte not slepe in al the nyghtertale,

But '*Domine labia*,' gan he crye and gale."

Chaucer, *Court of Love*, l. 1355.

The name nightingale comes from this word—the bird which *gales* or sings in the night.

"To *gale*, or gail. To cry with a harsh note. A term applied to the cuckoo.

"To *galyie*. To roar or brawl."—Jamieson.

"*Yawl* (v.). To squall or scream harshly, like an enraged cat; or the cry of a peacock is an excellent instance of *yawling*."—Forby, *East Anglia*.

"*YEN*=to throw. '*Yen that stone away*.'—Sept., 1887. N. E."

This word is often written *hen* and *ain*. The *y* sound is analogous to Devon *yere* for *here*, *yeffer* for *heifer*, &c. The word is as old as Alfred's time. 'Ang.-Sax. *hæman*, to stone; i.e. to pelt with stones. It is still most commonly applied to throwing stones, though not always.

"*ZAM-ZODY*=soft, damp, wet. See *CABBY*.—1888. S. B. G."

Sometimes used figuratively, as "a stupid *zam-zody* nin-cumpoop."

"*ZULL*=plough. See '*voor*.'—1888. F. B. J."

Ang.-Sax. *sulh*. See "sull," *W. Som. Word Book*.

ELEVENTH REPORT OF THE BARROW COMMITTEE.

ELEVENTH REPORT of the Barrow Committee, consisting of Mr. P. F. S. Amery, Mr. G. Doe, Mr. P. O. Hutchinson, Mr. E. Parfitt, Mr. J. Brooking Rowe, and Mr. R. N. Worth (Secretary), to collect and record facts relating to Barrows in Devonshire, and to take steps, where possible, for their investigation.

Edited by R. N. WORTH, F.G.S., Hon. Secretary.

(Read at Tavistock, August 1st, 1889.)

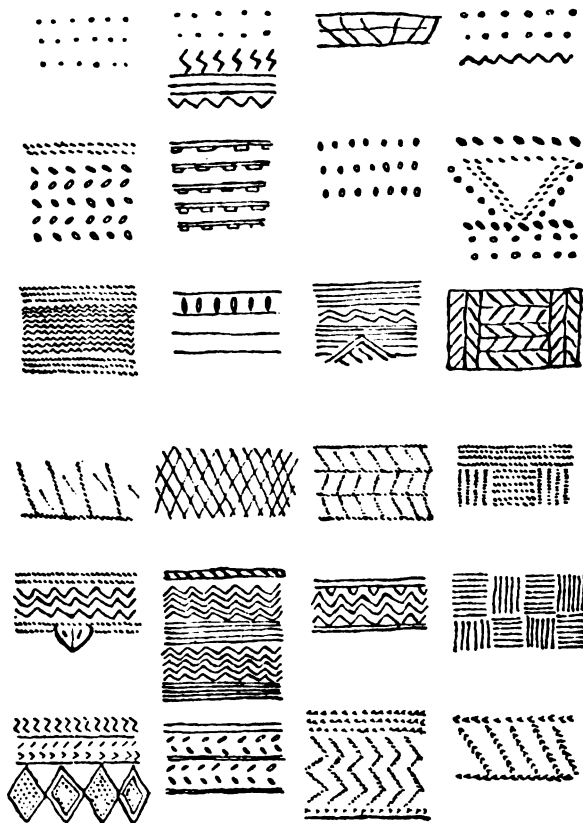
THE Committee have again to express regret at the paucity of communications, and to state that the past year hardly seems to have brought anything to light in connection with pre-historic sepulture in Devon. At the same time, they cannot regard their work as accomplished.

J. BROOKING ROWE, Chairman.

R. N. WORTH, Secretary.

MOUNT BATTEN.

Mr. R. Hansford Worth has found the remains of another funeral urn on the isthmus at Mount Batten, near Plymouth, adjacent to the kitchen-midden there, and not very far distant from the site of the pre-Roman cemetery of the later Bronze Age at Fort Stamford. The urn is sun-dried, and of the rudest unornamented type, and probably represents the earliest stage of fictile manufacture in Devonshire. It is remarkable to note how every year adds something to the traces of ancient and continuous occupation by man, from pre-historic times, of the eastern shores of Plymouth Sound, between the Plym and the Yealm.



VARIOUS FORMS OF ORNAMENT ON BURIAL URNS FROM BARROWS AND KISTVAENS
IN DEVON AND CORNWALL.

ANCIENT ORNAMENT.

"The careful examination and comparison of funeral urns throws considerable light on the dawn of artistic ideas among the early inhabitants of the country. Though the execution is commonly very rude, at times there is not only much taste but exceptional skill displayed, in the combination and formation of the dots and notches and lines—horizontal, vertical, and inclined—which all but universally make up the details. The annexed sketch represents twenty-four examples of rude ornamentation from burial urns found in Devon and Cornwall, the more elaborate examples being from the latter county. In only one case are curved lines introduced, and this is in the first pattern in the fifth row, where there seems to have been an attempt made to delineate the head of some animal. It may be unsafe to argue from such limited data; but, so far as it goes, the culture of Cornwall would seem to have been somewhat higher than that of Devon in the earlier—perhaps not the earliest—Barrow Period. Careful examination of the urns shows that the markings were made in various ways—by the nail of the decorator, by a twisted cord, and by pointed implements—of stone, wood, or bone, or perchance a broken shell or a thorn. It seems to me also that some of the better ornamented urns are rather the product of the professional than the amateur artist, for they are evidently the work of those who were accustomed to handle the primitive tools employed; and what is more, they appear to bear traces of what we may regard as schools or styles of ornament. The inquiry is an interesting one, and if more detail can be accumulated it may be carried to some important conclusions. (R. N. WORTH.)"

TENTH REPORT OF THE COMMITTEE ON DEVONSHIRE FOLK-LORE.

TENTH REPORT of the Committee—consisting of Mr. P. F. S. Amery, Mr. G. Doe (Secretary), Rev. W. Harpley, Mr. P. Q. Karkeek, and Mr. J. Brooking Rowe—for the purpose of collecting notes on Devonshire Folk-Lore.

Edited by G. DOE, Honorary Secretary.

(Read at Tavistock, July, 1889.)

AFTER the lapse of two years, during which no Report was made, the Committee hoped to be able to present a long list of notes on Devonshire Folk-Lore; but they regret that the contributions in hand are fewer than they were led to expect, and they therefore again earnestly appeal to members of the Association and their friends to send to any member of the Committee, or the Secretary, any Folk-Lore notes which they may think worthy of record.

The contributor's initials are appended to each note, his full address being as follows :

J. S. N. = Mr. J. Stevens Neck, Moretonhampstead.

J. J. O. E. = Mr. J. J. Ogilvie Evans, Teignmouth.

G. D. = Mr. George Doe, Torrington.

This Report would be incomplete without an allusion to the lamented decease of Mr. Robert Dymond, who was a member of the Committee from its formation, and whose valuable papers and kindly presence will long be remembered.

G. DOE, Secretary.

I. CHARMS OR MEDICAL SUPERSTITIONS.

Cure for Whooping Cough.—When a child has whooping cough a hair is taken from its head, put between slices of

bread and butter, and given to a dog; and if in eating it the dog cough (as naturally he will), the whooping cough will be transferred to the animal, and the child will go free.

J. S. N.

Charm for Stanching Bleeding of the Nose.—Jesus Christ was born in Bethlehem, baptized in the river Jordan; the water was wild in the wood, the child Jesus was meek and also good. He spoke and the water stood, and so shall your blood, in the name of the Father, and of the Son, and of the Holy Ghost.

J. S. N.

Magic in Drugs.—In October, 1888, the following letters came to me in the course of business. They were sent from a country place less than ten miles distant:

"SIR,—Will you kindly inform me if there is such a thing as the *Oil of Man* to be had? An answer will oblige. I remain, &c."

I replied that the article was not made in these days, and was not to be met with. Then came the second letter:

"SIR,—I return you many thanks for your kindness in informing me about the *Oil of Man*. I was told a few weeks ago by my Servant that Article could be had at the Chemist. I am a married lady, and my Husband was enduced to leave me a few months ago. My Servant says if I could get it to burn, he would return again to me. But as that Article cannot be had now, would you kindly inform me if there is any kind of drug can be had for that purpose, an answer will oblige. I remain, &c."

My reply need not be quoted. *Oil of Man* has been used for centuries. Moses Charras, in his *Royal Pharmacopœia*, 1678, directs it to be made by distillation of the skulls of healthy men who have been recently hanged, or have otherwise met with a violent death. In the 16th century W. Salmon, at his house, the "Blew Bull," in Shoe Lane, London, where he pursued the art and mystery of an apothecary "through the assistance of the Divine Help," prepared and sold *Potestates cranii humani* at 10s. the ounce. A correspondent says that in his early days *Oleum humanum* was boiled out of the bones of dissected subjects by the hospital porter, and was in great request.

Belief in the magical powers of certain drugs is still current in England. A chemist at Cranleigh, Essex, was lately asked for an oil, a few drops of which in a letter would not only ensure an answer, but even the return of the person addressed—in this case an errant daughter.

In another instance, the locality of which was not mentioned, a chemist was thus applied to:

"Please, sir, I want some powder—I don't know its name, but it is salmon-coloured—for a neighbour. She wants to burn it in the fire to fetch her husband back from America. My husband left me a short time ago, so I burnt some of the powder, and it brought him back."

J. J. O. E.

Extracted from the *North Devon Herald* of 18th April, 1889:

Cure for "White-mouth."—"Superstition in some of its most curious forms yet exists in many parts of North Devon. In a pretty little village not far from Braunton a case in point has recently occurred. It was about three weeks ago that the sexton of the parish church was engaged digging a grave for the interment of one recently passed away. Just as he had completed the gruesome task an old woman, respectably clad, made her appearance, carrying an infant of about fifteen months—a boy. She addressed the sexton thusly: 'Will you kindly allow me to place this child in the grave?' The sexton was amazed, and, half in query and half in astonishment, cried out, 'What d'ye say? why, he idden ded!' In very staid and proper language the old lady replied in the negative, but added that the child was suffering from 'white-mouth,' and if it was laid in the newly-dug grave of a female for a brief space, and taken up again, the troublous disease would be conjured away. 'Nonsense,' said the old man; 'I never year'd such a ridiculous story. Why, the people would laugh at 'eh if they know'd it.' The sexton shouldered his tools and walked away in disgust, but upon looking round saw the aged believer in the superstitious practice contriving to lay the infant in the sepulchre. With great difficulty she succeeded, and after a moment's rest took it out again, and hurried home. However strange this story may appear to our readers, our informant is prepared to vouch for its truthfulness. It does seem incredible, however, that in these days of enlightenment people are to be found who still pin their faith to observances which are worthy alone of the dark ages. Another story similar in character comes to us from an eye-witness, and is of even more recent date. Early one morning he watched a woman, well over seventy, take a child to the river, lay it on its stomach, with its face just touching the flowing water, and producing a white thread draw it between the child's lips, and then through the water. This performance she followed up with hanging the thread upon a white thorn which was growing close by. Making his presence known, the intruder asked the meaning of the curious performance, and from her reply learnt that the woman firmly believed that if she unravelled a skein of white thread, and after counting all the lengths secured the odd needleful, and passed it

between the child's lips as already described, and repeated the operation five mornings running, it would effect a permanent cure of 'white-mouth.' Of course our informant pooh-poohed the idea, but the old lady retorted that she had cured many children in this way when several doctors had failed. This, of course, completely answered the 'sceptic,' who walked away non-plussed."

G. D.

II. ASTROLOGY.

The Fortune of David G—, as Foretold soon after his Birth.—You are born under a planet by name "Libra," under the sun which causes you to be subject to sickness and inflammation in your youthful days; but fortunate, and especially upon the waters or things pertaining to the water. Also it causeth likewise a comely body, and a nimble and a pleasant tongue or speech, and a good name, seeking out secrets, but seldom stedfast in promises. Although he pretend otherwise, he shall put himself in great dangers and troubles. His first wife shall not continue with him long. He shall also have inheritance of the goods of dead men, and partly by his own wit and industry. Neither shall he be altogether unfortunate by four-footed beasts, but he shall suffer many and great things. He shall be friendly and merry and jocund. He shall delight in fields and in herbs, wandering into strange places. About the age of twenty-three he shall marry, which marriage shall be fortunate. He is also a good interpreter of dreams. He must be very careful of scalding water and of fire, for he may receive hurt by them, without great regard be had. He will be very likely to do well after the age of thirty years, for he was born on a fortunate day—"Saturday"—with the sun, for that do not happen unto all men. Also fated to riches and a long life, but will die rather in a strange fashion. He must be sure to keep his feet dry and warm; and he must try to keep himself from getting wet with rain-water, for that will be a great hurt to him. He has more friends than enemies.

J. S. N.

The Nativity of a Woman called Mary Anna G.—Mary Anna, you are born under a planet by name "Pisces," as often maketh them covetous, merry, diligent, of a good disposition, loving the company of good men; also of a quick and ready tongue, standing much in her own conceit, and fortunate in seeking out treasures, for that is given unto her. And she will find something unlooked for, so as to be enriched by other men's goods; yet she will never be very

rich, but in her own opinion thinks to possess great riches. Her mind also will be full of troublesome thoughts. When you go about to marry be sure and do not be in too much haste. Be sure to marry for love, and not for money; for if you don't, you will sure to be parted. I cannot warrant her long life, except she pass the age of thirty-five years, then there is hope of long life. In youth she will vex her children with many evils, and oftentimes without desert. The day that she was born on is good to begin any work or to go on the water, for her fortune is towards the south. If she should live to pass the age of thirty-five, she must expect to be left a widow, and marry again. When you dream, it is a good dream—it will be effected and brought about; but a bad dream will have no meaning. J. S. N.

III. POPULAR BELIEFS AND SAYINGS.

A peck of dust in March is worth a guinea. J. S. N.

If a person should happen to see one, two, three, or four magpies during a walk, the following things will happen, according to the number seen :

“One for sorrow,
Two for mirth,
Three for a wedding,
Four for a birth.” J. S. N.

Three successive frosty mornings bring rain. J. S. N.

If holly berries are plentiful it will be a severe winter.
J. S. N.

A face as long as a bass-viol. J. S. N.

SEVENTH REPORT (SECOND SERIES) OF
THE COMMITTEE ON THE CLIMATE OF DEVON.

SEVENTH REPORT of the Committee—consisting of Mr. James Hamlyn, Mr. E. E. Glyde, F.R.MET. Soc., Mr. E. Parfitt, and Mr. P. F. S. Amery (Secretary)—appointed to collect and tabulate trustworthy and comparable observations on the climate of Devon.

Edited by E. E. GLYDE, Secretary, *pro tem.*

(Read at Tavistock, July, 1889.)

YOUR Committee present an abstract of meteorological observations made during 1888, relating to the Rainfall, Temperature, Humidity, and Cloud, as recorded in localities fairly representing the various districts of the county.

The station at Woodway, Teignmouth, is omitted, as only observations of rainfall are now taken there, and these are almost identical with the Bitton observations. The station at Rocombe, Torquay, has been discontinued, and the instruments moved to the Devon Rosery, Torquay, from which place observations are appended.

The Secretary, on behalf of the Committee, again begs to thank those observers who have assisted him by contributing their figures direct. In a few cases in which the Temperatures, Humidities, or Cloud amounts differed slightly from those given in the *Meteorological Record*, published by the Royal Meteorological Society, the figures in the *Record* are here given, as they are rigorously examined and corrected by the Assistant Secretary of that Society. The observations from the Devon Rosery (Torquay), Exeter, Buckfastleigh, and Holne are not published by the Royal Meteorological Society.

The particulars of the stations and observers are as follows :

STATION.	ELEVATION. feet.	OBSERVER.
Ilfracombe	... 25 ...	W. M. Tattam.
Teignmouth (Bitton) ...	... 70 ...	W. C. Lake, M.D.
Torquay (Castle College) ...	... 166 ...	O. J. Harland.
„ (Devon Rosery) ...	... 36 ...	A. Chandler,
Babbacombe (Kirkham) ...	... 293 ...	E. E. Glyde, F.R.MET.SOC.
Sidmouth (Sidmount) ...	... 186 ...	W. T. Radford, M.D., F.R.A.S., F.R.MET.SOC.
Exeter (Devon and Exeter } Institution) ... }	140 ...	E. Parfitt.
Brampford Speke ...	... 140 ...	Miss M. B. Gamlen.
Cullompton ...	... 202 ...	T. Turner, F.R.MET.SOC.
Ashburton (Druid) ...	... 584 ...	P. F. S. Amery.
Princetown (Dartmoor) ...	... 1395 ...	F. W. S. Stone, M.B.
Holne Vicarage ...	... 650 ...	Rev. F. Gill, M.A.
Buckfastleigh ...	... 150 ...	James Hamlyn.

EDWARD PARFITT, Chairman.
E. E. GLYDE, Secretary, *pro tem.*

JANUARY.

STATIONS.	RAINFALL.			TEMPERATURE IN STAND.								Cloud, 9 a.m. (0-10).
	Total.	Wet Days.	Greatest Fall.	Temperature, 9 a.m. on first day of month.	MEANS.				EXTREMES.			
					Temperat. 9 a.m.	Humidity, 9 a.m.	Minima.	Maxima.	Minimum.	Maximum.		
Ilfacombe . . .	1.34	14	.52	37.0	deg. 41.8	% 84	deg. 38.5	deg. 45.5	deg. 29.1	deg. 53.0	7.8	
Teignmouth (B.) .	1.08	15	.20	37.8	40.6	80	36.3	45.3	24.0	54.3	7.6	
Torquay (C. C.) .	.95	12	.17	37.6	41.1	88	37.1	45.3	23.6	53.7	7.2	
Torquay (D. R.) .	1.11	10	.20	37.5	40.6	89	36.1	46.0	22.6	53.9	8.3	
Babbacombe . . .	1.13	15	.20	36.9	40.6	89	37.2	45.3	22.9	56.2	8.0	
Sidmouth . . .	1.57	16	.54	36.4	39.1	92	35.1	44.0	22.5	52.4	7.6	
Exeter . . .	1.28	12	.34	...	...	...	31.9	...	18.0	...	7.0	
Brampford Speke .	1.53	18	.34	33.5	37.5	93	32.4	43.9	18.7	51.7	8.3	
Cullompton . . .	1.42	17	.33	...	38.1	91	32.7	43.7	16.6	54.3	8.1	
Ashburton . . .	2.01	15	.35	34.0	39.8	90	35.5	45.7	24.3	58.3	6.5	
Princetown . . .	2.73	20	.78	...	38.5	88	31.7	45.0	19.0	58.9	7.7	
Holne . . .	2.58	19	.45	...	...	...	...	...	...	...	...	
Buckfastleigh . .	2.08	13	.50	35.1	...	...	...	...	19.0	53.5	7.1	

FEBRUARY.

Ilfacombe . . .	.88	10	.43	36.0	38.5	82	35.7	41.6	26.1	49.4	8.3
Teignmouth (B.) .	.60	9	.18	32.8	36.1	83	32.6	41.5	22.6	53.4	7.1
Torquay (C. C.) .	.39	8	.14	33.1	36.4	81	32.7	41.0	22.8	52.2	6.3
Torquay (D. R.) .	.49	10	.17	33.4	36.5	87	30.8	42.3	20.7	55.1	6.9
Babbacombe . . .	.46	11	.15	32.4	35.9	82	32.3	41.6	21.6	55.4	7.4
Sidmouth . . .	.87	15	.30	31.3	34.9	...	31.7	40.0	21.8	53.5	7.6
Exeter . . .	.26	3	.12	...	...	...	28.7	...	16.0	...	6.2
Brampford Speke .	.75	15	.21	32.8	35.3	88	31.0	40.6	17.8	51.4	7.6
Cullompton . . .	.61	13	.11	...	35.4	82	30.6	40.6	13.3	52.2	7.2
Ashburton . . .	.64	10	.22	30.0	35.3	82	31.2	42.2	20.7	54.7	6.7
Princetown . . .	3.34	21	.49	...	32.2	...	24.3	37.9	14.0	48.9	8.0
Holne . . .	.87	14	.24	...	...	...	...	...	...	...	...
Buckfastleigh . .	.49	5	.25	32.0	...	...	...	...	16.5	53.5	6.0

MARCH.

Ilfacombe . . .	2.96	19	.53	31.5	41.0	85	36.5	44.9	30.1	53.0	8.0
Teignmouth (B.) .	5.87	19	1.00	30.3	40.5	83	35.2	45.8	26.0	53.6	7.7
Torquay (C. C.) .	4.68	19	.62	31.1	40.6	77	35.2	44.8	23.8	52.2	7.1
Torquay (D. R.) .	5.28	18	.65	31.5	40.7	82	33.6	46.0	26.1	53.6	7.7
Babbacombe . . .	4.68	20	.67	30.0	40.4	81	34.6	44.9	25.4	52.5	7.5
Sidmouth . . .	3.38	20	.47	28.8	38.7	85	33.7	44.2	23.8	53.4	8.2
Exeter . . .	4.02	17	.60	...	...	...	31.3	...	19.0	...	...
Brampford Speke .	4.10	20	.55	31.1	40.0	84	33.0	46.4	21.1	58.6	7.7
Cullompton . . .	4.09	19	.68	...	39.6	82	33.2	45.7	22.7	56.4	7.4
Ashburton . . .	7.40	18	1.20	26.5	39.5	81	33.2	46.0	24.6	53.2	7.0
Princetown . . .	8.11	23	.97	...	34.4	81	29.4	38.4	18.0	44.0	7.7
Holne . . .	9.49	20	1.64	...	...	...	...	...	...	...	...
Buckfastleigh . .	9.75	18	1.55	28.0	...	...	...	...	19.5	53.5	6.9

APRIL.

STATIONS.	RAINFALL.			TEMPERATURE IN STAND.								Cloud, 9 a.m. (0-10).
	Total.	Wet Days.	Greatest Fall.	Temperature, 9 a.m. on first day of month.	MEANS.				EXTREMES.			
					Temperat. 9 a.m.	Humidity, 9 a.m.	Minima.	Maxima.	Minimum.	Maximum.		
Ilfacombe . . .	in. .88	17	in. .46	deg. 40.6	deg. 45.2	% 83	deg. 41.2	deg. 48.6	deg. 33.8	deg. 57.0	7.4	
Teignmouth (B.) .	1.88	11	.50	40.2	45.8	82	40.3	51.6	32.3	63.8	7.5	
Torquay (C. C.) .	1.56	9	.56	39.4	44.8	79	39.7	49.3	30.3	58.5	6.6	
Torquay (D. R.) .	1.82	10	.65	40.0	45.7	75	38.8	50.5	28.4	60.5	7.6	
Babbacombe . . .	1.65	12	.52	38.5	45.1	80	39.1	50.2	30.9	61.9	8.1	
Sidmouth . . .	2.06	15	.36	38.0	42.5	85	38.4	49.0	29.0	57.2	7.7	
Exeter . . .	1.28	12	.32	...	...	...	35.9	...	24.0	...	...	
Brampford Speke .	1.39	15	.34	40.8	45.7	81	37.7	52.6	25.2	60.9	8.0	
Cullompton . . .	1.54	18	.40	...	44.6	80	37.7	51.1	24.9	60.5	7.7	
Ashburton . . .	2.84	12	.75	37.3	45.0	79	38.9	50.8	31.8	61.1	7.3	
Princetown . . .	3.06	19	.89	...	39.3	90	33.9	44.1	24.0	49.0	7.5	
Holne . . .	3.47	17	.83	...	...	...	...	...	...	...	...	
Buckfastleigh . .	2.79	11	.85	39.1	...	...	...	...	27.0	60.8	7.3	

MAY.

Ilfacombe . . .	1.20	11	.36	49.0	52.7	84	47.6	58.0	42.8	70.0	4.9
Teignmouth (B.) .	2.38	7	.85	49.6	54.1	77	45.7	59.5	37.2	70.6	5.9
Torquay (C. C.) .	2.47	8	.85	49.8	52.2	75	45.1	57.8	32.8	65.9	5.7
Torquay (D. R.) .	2.57	8	.77	51.0	53.6	73	44.8	58.2	34.9	68.1	5.3
Babbacombe . . .	2.53	8	.82	49.4	52.9	78	44.7	57.9	35.5	67.7	6.1
Sidmouth . . .	1.42	7	.56	49.0	51.2	80	43.9	57.4	35.4	70.5	5.6
Exeter . . .	1.62	7	.54	...	...	...	40.8	...	32.0	...	5.6
Brampford Speke .	1.24	7	.37	53.0	55.1	74	42.9	63.3	34.2	70.9	6.4
Cullompton . . .	1.84	8	.56	...	53.8	72	41.9	61.5	31.6	70.6	5.8
Ashburton . . .	3.78	9	1.39	47.0	53.4	77	44.8	59.8	38.9	69.9	5.3
Princetown . . .	4.71	11	.98	...	43.5	90	37.9	52.4	33.5	61.4	5.5
Holne . . .	4.65	10	1.64	...	...	...	...	...	...	...	...
Buckfastleigh . .	...	8	...	49.5	...	...	...	...	31.6	70.2	3.9

JUNE.

Ilfacombe . . .	2.46	16	.63	55.5	57.0	87	52.5	62.3	46.3	78.2	7.4
Teignmouth (B.) .	1.93	9	.68	54.2	57.9	81	51.0	63.8	44.1	72.0	7.5
Torquay (C. C.) .	2.23	14	.73	54.4	57.0	79	50.1	62.2	42.8	70.9	6.0
Torquay (D. R.) .	2.34	12	.75	55.0	57.8	81	50.1	63.2	41.9	72.6	6.7
Babbacombe . . .	2.51	15	.97	54.2	57.3	82	49.7	62.9	43.5	72.8	7.4
Sidmouth . . .	3.11	17	.56	54.0	55.5	85	49.2	61.5	40.4	70.2	7.1
Exeter . . .	2.46	15	.48	...	...	...	48.0	...	39.5	...	5.4
Brampford Speke .	3.18	15	.82	57.7	58.4	80	49.1	66.1	39.1	75.4	7.8
Cullompton . . .	3.43	18	.70	...	57.7	78	48.2	65.1	37.4	76.5	8.0
Ashburton . . .	3.72	14	.97	53.0	57.1	82	49.6	64.2	42.5	73.4	7.5
Princetown . . .	2.95	16	.51	...	45.0	94	39.1	57.9	34.5	72.5	7.9
Holne . . .	4.11	13	1.40	...	...	...	...	...	...	...	...
Buckfastleigh . .	3.56	12	1.00	49.5	...	...	...	...	33.0	74.1	5.2

JULY.

STATIONS.	RAINFALL.			TEMPERATURE IN STAND.							Cloud, 9 a.m. (0-10).
	Total.	Wet Days.	Greatest Fall.	Temperature, 9 a.m. on first day of month.	MEANS.			EXTREMES.			
					Temperat. 9 a.m.	Humidity, 9 a.m.	Minima.	Maxima.	Minimum.	Maximum.	
	in.		in.	deg.	deg.	%	deg.	deg.	deg.	deg.	
Ilfracombe . . .	2.40	20	.51	57.3	58.9	87	54.8	61.8	46.8	65.3	8.3
Teignmouth (B.) .	7.01	22	1.71	61.0	58.7	87	53.1	63.9	45.8	70.0	8.0
Torquay (C. C.) .	5.24	25	.62	61.8	58.1	83	52.5	62.7	45.3	69.3	6.9
Torquay (D. R.) .	5.66	26	.72	59.1	58.7	82	52.6	63.7	45.6	70.2	8.6
Babbacombe . . .	7.21	25	1.98	61.3	58.5	84	51.8	63.1	44.4	69.6	8.1
Sidmouth . . .	5.83	28	1.10	56.1	56.5	89	51.6	62.0	43.6	67.0	8.6
Exeter . . .	5.54	21	.98	...	...	...	49.2	...	44.0	...	6.5
Brampford Speke .	6.91	26	1.08	61.0	59.4	85	51.1	66.1	41.9	71.0	8.4
Cullompton . . .	7.21	25	.97	...	58.6	83	50.5	65.2	41.5	71.0	7.9
Ashburton . . .	7.32	26	.97	58.0	58.2	84	51.2	64.4	42.7	71.3	6.5
Princetown . . .	10.69	29	.98	...	55.8	96	51.4	61.6	47.0	66.9	6.9
Holne . . .	9.44	26	1.43	...	...	...	...	...	...	...	...
Buckfastleigh . .	7.65	25	1.20	64.2	...	...	...	...	41.0	70.0	7.1

AUGUST.

Ilfracombe . . .	2.42	17	.61	59.5	60.1	85	55.8	63.6	49.3	74.4	6.5
Teignmouth (B.) .	2.54	15	.57	57.0	59.7	82	53.2	64.8	42.8	71.1	6.9
Torquay (C. C.) .	2.64	16	.56	56.4	59.2	79	52.6	63.9	42.3	74.2	6.3
Torquay (D. R.) .	3.01	16	.59	58.6	59.2	84	52.0	64.6	41.1	74.4	6.9
Babbacombe . . .	2.97	18	.59	55.1	59.7	82	52.0	64.3	43.7	75.0	7.0
Sidmouth . . .	2.74	21	.50	56.4	57.3	87	51.7	63.0	41.1	67.4	6.8
Exeter . . .	2.84	11	1.24	...	...	...	48.5	...	40.0	...	...
Brampford Speke .	2.43	17	.42	58.6	59.6	84	50.3	65.6	40.0	75.7	6.6
Cullompton . . .	2.18	19	.51	...	60.0	81	49.8	65.9	37.5	76.6	6.6
Ashburton . . .	2.92	17	.73	57.0	58.8	85	51.8	64.3	45.2	76.7	6.2
Princetown . . .	10.55	23	2.10	...	56.3	92	49.8	63.4	36.4	77.4	7.8
Holne . . .	3.64	18	.78	...	...	...	...	...	...	...	...
Buckfastleigh . .	4.05	16	.88	57.5	...	...	...	...	37.8	77.4	6.2

SEPTEMBER.

Ilfracombe . . .	1.28	9	.36	60.0	58.0	87	52.6	61.7	46.3	69.5	5.7
Teignmouth (B.) .	.77	9	.31	57.9	56.9	85	49.9	63.6	41.5	68.9	5.7
Torquay (C. C.) .	.57	9	.20	59.6	56.3	82	49.5	61.3	41.3	68.3	6.6
Torquay (D. R.) .	.61	9	.21	57.0	57.1	83	48.9	63.3	44.4	67.4	6.1
Babbacombe . . .	.63	9	.21	60.1	56.6	85	49.8	61.7	39.5	66.6	6.1
Sidmouth . . .	.89	9	.34	58.0	54.6	88	49.4	62.2	41.5	68.0	5.8
Exeter . . .	.80	6	.30	...	...	...	44.3	...	36.5	...	6.0
Brampford Speke .	.83	8	.21	56.2	55.0	88	46.1	62.5	37.1	66.9	7.4
Cullompton . . .	.90	12	.33	...	56.0	84	45.3	63.9	34.5	69.5	6.9
Ashburton . . .	.85	9	.38	59.0	57.0	85	49.4	63.2	41.5	71.5	6.8
Princetown . . .	3.12	7	1.12	...	52.5	83	...	61.7	30.5	69.4	6.0
Holne . . .	1.18	12	.51	...	...	...	...	...	...	...	...
Buckfastleigh . .	.63	5	.28	60.5	...	...	...	...	33.4	73.0	6.8

OCTOBER.

STATIONS.	RAINFALL.			TEMPERATURE IN STAND.								Cloud, 9 a.m. (0-10).
	Total.	Wet Days.	Greatest Fall.	Temperature, 9 a.m. on first day of month.	MEANS.				EXTREMES.			
					Temperature, 9 a.m.	Humidity, 9 a.m.	Minima.	Maxima.	Minimum.	Maximum.		
Ilfracombe	in.		in.	deg.	deg.	%	deg.	deg.	deg.	deg.		
Teignmouth (B.) . . .	2.05	14	.51	50.5	52.9	87	47.9	56.6	41.3	64.1	6.5	
Torquay (C. C.) . . .	1.69	11	.85	47.6	49.4	86	44.5	56.3	34.2	64.8	6.5	
Torquay (D. R.) . . .	1.52	14	.70	47.1	49.8	83	44.3	55.5	34.5	63.1	6.1	
Babbacombe	1.69	14	.70	47.0	48.5	50.1	84	43.3	56.8	30.9	64.7	
Sidmouth	1.67	16	.75	50.7	50.7	84	43.8	56.0	33.3	62.6	6.9	
Exeter	1.61	14	.64	47.8	47.8	87	43.1	55.2	31.5	59.3	6.4	
Brampford Speke . . .	1.18	7	.70	...	...	...	38.2	...	29.8	...	...	
Cullompton	1.45	13	.62	42.6	47.0	91	40.1	54.5	28.7	64.1	6.8	
Ashburton	1.37	13	.60	...	47.5	86	38.8	56.5	25.6	63.4	6.7	
Princetown	2.58	14	.80	50.0	50.4	85	44.0	56.6	31.4	62.4	6.2	
Holne	2.48	11	.79	...	42.5	82	32.9	50.4	28.0	63.9	5.3	
Buckfastleigh	2.70	17	.69	...	...	...	...	...	...	...	...	
	2.51	11	.75	51.0	...	...	...	...	30.0	60.9	6.5	

NOVEMBER.

Ilfracombe	6.02	23	.89	51.2	50.9	92	47.2	53.8	36.7	58.3	8.6
Teignmouth (B.) . . .	10.83	24	2.10	45.4	49.6	91	45.8	53.4	35.7	58.5	8.1
Torquay (C. C.) . . .	8.43	23	1.79	46.8	49.7	86	45.6	53.2	36.3	57.2	7.6
Torquay (D. R.) . . .	9.40	25	1.80	43.2	49.7	88	45.0	55.4	37.7	58.5	7.7
Babbacombe	8.52	25	1.81	44.7	49.2	89	45.1	53.2	36.3	56.9	8.0
Sidmouth	8.18	27	1.86	46.4	48.4	89	44.3	53.3	32.8	59.1	8.8
Exeter	7.54	22	1.54	...	...	...	40.1	...	29.5	...	...
Brampford Speke . . .	8.79	23	2.52	41.9	47.5	91	41.8	52.8	32.7	59.5	8.4
Cullompton	8.68	27	2.29	...	47.7	90	42.4	52.6	30.7	59.7	7.7
Ashburton	12.98	30	2.14	47.3	47.9	92	44.0	53.6	32.3	59.3	7.7
Princetown	11.77	29	.99	...	43.8	96	38.5	52.7	28.0	58.9	9.3
Holne	14.74	29	2.06	...	...	...	...	...	...	...	...
Buckfastleigh	13.88	28	2.10	41.6	...	...	...	...	31.5	67.7	7.3

DECEMBER.

Ilfracombe	4.16	17	1.20	50.3	46.9	90	42.9	50.7	31.3	57.6	7.3
Teignmouth (B.) . . .	4.13	18	.78	39.6	45.3	89	41.1	49.6	29.4	56.2	6.5
Torquay (C. C.) . . .	2.83	18	.41	42.4	45.6	86	41.2	50.0	29.3	57.5	7.1
Torquay (D. R.) . . .	3.51	18	.52	38.0	45.2	88	40.1	50.9	28.9	59.0	6.7
Babbacombe	3.09	18	.47	42.2	45.2	89	40.9	49.9	28.3	56.9	6.9
Sidmouth	2.41	20	.45	43.0	44.4	90	40.9	49.7	30.0	57.2	7.0
Exeter	3.30	16	.84	...	...	...	34.4	...	23.8	...	...
Brampford Speke . . .	3.29	19	.55	33.8	41.8	94	36.1	47.6	25.8	57.8	6.9
Cullompton	3.32	19	.60	...	41.3	93	35.8	48.0	24.6	56.5	7.3
Ashburton	7.79	21	1.49	44.8	44.5	89	40.0	49.9	30.7	57.4	6.0
Princetown	7.95	20	1.94	...	42.9	89	35.3	...	27.0	...	6.5
Holne	8.98	22	1.53	...	...	...	...	...	...	...	...
Buckfastleigh	8.16	19	1.34	36.5	...	...	...	...	23.8	56.8	7.1

FIRST REPORT OF THE COMMITTEE ON DEVONSHIRE RECORDS.

(Read at Tavistock, July, 1889.)

AT the Exeter Meeting last year the following resolution was passed :

“That the Very Rev. Canon Brownlow, Dr. Brushfield, Mr. J. R. Chanter, Mr. R. W. Cotton, The Very Rev. Dean Cowie, Rev. J. Ingle Dredge, Mr. J. Brooking Rowe, Mr. E. Windeatt, and Mr. R. N. Worth, be a Committee for the purpose of investigating and reporting on any collections of Manuscripts, Records, or Ancient Documents existing in, or relating to, Devonshire, with the nature of their contents, their locality, and whether in public or private hands ; and that Mr. J. R. Chanter be the Secretary.”

Owing to this resolution having been accidentally omitted to be printed with the *Transactions* for the year, the members of the Committee have not met for the purpose of conferring and arranging their best plan of action, and are scarcely aware of their appointment and its purpose. No combined or collective report is therefore made. But as a preliminary to the work, it is as well to recall and direct attention to the Presidential Address of Mr. J. Brooking Rowe at the Crediton Meeting, which incidentally dealt with the subject, and included lists and notices of some of the records, MSS., and documentary matter relating to the county. But much yet remains for research and description, which this Committee are asked to undertake. Their work would mainly be directed to obtaining full particulars of all collections, large or small, and reporting on them as expressed in the resolution ; whether such be strictly historic records, early diaries, or gatherings by public bodies or individuals, in any departments of research, whether in History, Science, or Art. A notable instance of this latter was shown in the extensive and varied collection of the late Col. Harding, a report on

which was read at the Exeter Meeting, and printed in our *Transactions*, the plan of which report is suggested as a desirable one in similar cases.

It is also hoped that the work of the Committee will extend to obtaining complete accounts and descriptions of all the Parish Registers existing in the county, and with this view to enlist the assistance of the clergy in each parish, who are generally their custodians. In other respects the work will be of the same character, as regards the county, as the broader and more general one of "The Royal Commission on Historical Manuscripts," appointed some years since, and still continuing its work, which has now extended to Twelve Reports, printed by order of Parliament. As a first step in the direction indicated by the resolution, Canon Brownlow gives below a very useful analysis or summary of such portions of the Reports already issued as refer to the county, or, as the Canon describes it, "Collections of historical MSS. which are now existing in Devonshire, whether relating to Devonshire or not," taking the Reports successively, not transcribing the whole Report, but giving some idea of its contents, and the pages where fuller information may be found.

J. R. CHANTER, Secretary.

*Extracts from Reports of the Royal Historical Commissioners,
by Canon Brownlow.*

The First and Second Reports contain no account of collections in this county, but the Third Report gives a description of the collections belonging to the Earl of Devon, to Earl Fortescue, and to the Corporation of Totnes. The Commissioners say:

"The Earl of Devon possesses a book of expenses of the Earl of Devon, temp. Henry VIII.; a manuscript account of the Courtenay family, by Sir Peter Balle (A.D. 1625); and a large and beautifully-executed pedigree of the Courtenays, also by Sir Peter Balle." (p. xv.)

Mr. A. J. Horwood, inspector for the Commission, says of the first:

"These must be the expenses of Sir Henry Courtenay, who was restored to the title in 1511. It contains entries for boat-hire, plays, dress, &c., and seems well worth careful reading. In the library I was shown a good copy of the *Book of St. Albans*, fol., 1486. The leaf A 1 is gone, but there is the last leaf containing the printer's mark in red. A copy of *Saxo-Grammaticus* has the autograph signature of Archbishop Cranmer." (p. 216.)

In the Ninth Report, published in 1883, Mr. H. C. Maxwell Lyte gives an account of a small volume on vellum, not noticed in the foregoing. It is of the fourteenth century, and is entitled *Parentela Courtenayorum*. It contains the issue of Sir John Dawney, the pedigree of the Courtenay family from Baldwyn de Briono to the year 1325, and other pedigrees; a cartulary of the manor of Okehampton, and various conveyances of property near that manor. Among other documents is a release, dated 1311, granted to the Abbot and Convent of Ford, from "the duty of maintaining two horses or palfreys and two grooms, and a grey bitch, or a bitch with its whelps, at the said abbey." Also, a transcript of a bull of Pope Alexander III., granting "to Sir Reginald de Courtenay, and to his wife Hawis, and to their heirs, to have a free chapel at Okehampton, exempt from the jurisdiction of any other person, and confirming the rights of Baldwin, a monk of Ford, as chaplain thereof." This is dated A.D. 1178. (Ninth Report, part ii., pp. 402-406.)

The MSS. of the Earl of Fortescue, at Castle Hill, consist of letters; three of them from Frederick, Prince of Wales, to Lord Clinton, showing that he assisted his political friends by money as well as influence to gain their seats in Parliament. The last letter noticed by Mr. Horwood is one from Lord Grenville, of March 18th, 1807, in which he says:

"The King (George III.) wanted his ministers to sign an agreement that they would never propose any manner of concession to Catholics. This they declined in writing, and he has given us to understand that he must look out for other ministers." (p. 221.)

The MSS. in the archives of the Corporation of Totnes are much more important. They contain several Rolls of the Merchants' Guild, dating from A.D. 1260 to 1343. Mr. H. T. Riley, the inspector for the Commission, says:

"Admissions to the Guild seem to have been obtained by purchase, gift, or relationship. The 'seats' of some are named as being above or below those of others. This, it appears to me, may in part bear reference to the seats occupied, as of right, by the members of the Guild in the body of the parish church; for it is a fact, that down to recent times it was the duty of the Mayor of the town, who traditionally represented the head of the Guild, to assign seats in the church to the inhabitants. From the great care taken, however, in defining the sittings of the members of the Guild, it seems not improbable that a certain seat, or place, was assigned to each merchant (or trader) in the open market of the town, a corresponding seat being probably assigned in the church as well." (p. 342.)

There is no evidence in the extracts given from the Rolls to support Mr. Riley's conjecture about the seats in the parish church. In a paper read by Mr. Windeatt at Plympton, two years ago, some very curious information concerning the seats in the parish church was given from the brief of a lawsuit instituted by the Corporation in 1706 (which brief is Mr. Windeatt's private property), from which it appears that the church had been rebuilt by the Mayor and Corporation, and that as early as the ninth year of Henry VI. the Corporation had the ordering of the Church:

"And its customary for the Maior for the time being in bothe Isles and body of the Church to place such persons as he thinks fit in what seats he pleases which such persons so placed by virtue thereof enjoy during life. The usual way of placing is by verball order from the Maior to ye Serjeant at Mace who when he places anyone usually goes before such as are to be placed in time of divine Service and puts them into the seats and place them where they are to sitt. But upon Extraordinary occasions the Mayor has used to consult his brethren and the right was always deemed to be the Burgesses as well as the Mayor's tho in common cases he has used to doe it without seeking their consent." (*Trans. Devon. Assoc.* xix. 540.)

But no connection between the seats in the church and the seats in the market is to be found in Mr. Windeatt's paper.

In the Fourth Report is contained an account of the Registers of the parish of Hartland from 1558; and Mr. Riley remarks, "The continuation of this Church Register throughout the whole period of the Commonwealth without a break is a remarkable circumstance, and not easily accounted for." (p. 428.) Several further extracts are given in the Fifth Report. (p. 571-575.)

The Registers of the parish of Parkham, near Bideford, date from the year 1599, but contain a transcript of entries from the year 1538. Mr. Riley gives some extracts from those of the seventeenth and eighteenth centuries. (p. 469.)

The most interesting Devonshire MSS. in this Report are those in the possession of Mr. J. R. Pine-Coffin, of Portledge, and comprise deeds showing that the Coffin family owned this property as early as the reign of Henry III., who in 1254 granted "to Richard Coffin and his heirs for ever free warren in all his demesnes and lands of Alwinton, in the county of Devon, so long as they be not within the bounds of the forest." From four to five hundred of these family deeds date between the reigns of Henry III. and

Henry VIII. One of these documents is a very curious agreement between Richard de Cockington and Richard de Poulesholte—"That the aforesaid Richard de Cokematone and Letice, his wife, are bound unto the said aforesaid Richard de Poulesholte in 20 marks sterling, for the duel which the same Richard de Paulesholte shall wage for the same Richard de Cockmatone and Letice against William Fitz-Jordan, for one messuage and one plough-land, with the appurtenances, in Cokematone." This deed bears the date of 1290; and another deed shows that the duel did not take place, but that William Fitz-Jordan submitted, and surrendered his claim. Mr. Riley remarks, that "the services of their intended champion would have cost Richard and Letice nearly twice as much as the sum in dispute." A not uncommon result of law-suits in the present day.

Besides the account of Mr. Pine-Coffin's MSS. in the Fourth Report, Mr. Riley returns to the subject again in the Fifth Report, which deals with several hundred MSS. hunted out by the owner since the former Report was published. One of the earliest of these documents is a *computus* of the manor of Monkeleigh, near Torrington, in the year 1363. A second *computus* in 1369, and a third of 1393, gives curious details illustrating the state of agriculture in those days.

It seems that 29s. were received for "one bull and 3 cows, sold, witness David Carswylle;" 12d. for 4 geese, and 22½d. for 15 hens. The milk of 10 cows fetches 15s. for the year. A stack of wheat is sold in gross by the lord to John Stewlake for 22s. 4d. The lord also sold in gross to Ralph Daubon 43 sheep, 3 "hoggesters," and 39 lambs, for 60s. "A reeder was paid 3s. 7d. for working at the grange 9 days, covering the hall, kitchen, and cowhouse (if that is the meaning of 'baiera'). Gloves bought for the bailiff, the reeve, and servant of the lord, cost 6d. The latter, Martin Southleigh by name, had 10s. yearly for his wages." The lord's fee for a tenement was "one cow, valued at 3s. 10d." "A woman hired to pull out the straw for (covering) the hall of the grange receives 2d. The shepherd receives 3s. for 36 weeks, his 'livery' in wheat being entered on the other side. One peck of oatmeal costs 3d., one peck of salt 2d."

Wages must have been good on Mr. Coffin's manor; for Mr. Seeborn shows that, in the reign of Edward III., in Oxfordshire nineteen days' work were valued at 2s. 4½d.,

and one day's work at washing and shearing sheep was valued at $\frac{1}{2}$ d. (*English Vil. Com.* p. 43.)

Mr. Pine-Coffin's collection includes 600 letters, of the latter half of the seventeenth century, addressed to his ancestor, Richard Coffin, who was High Sheriff of Devon in 1685, several of them being from Edmund Prideaux, father of the Dean of Norwich, well known by his "Connection between the Old and New Testament." These letters give accounts of the Titus Oates Plot, the rebellion under Monmouth, the bloody assize of Judge Jefferies, and the abdication of James II.; and those from Dean Prideaux throw much light on University matters, both at Oxford and Cambridge, in the time of William and Mary. They contain a variety of information on matters both domestic and public, at home and abroad. The extracts from them fill sixteen pages. One of them, dated February 6th, 1694 (5), states :

"The Lord Admirall Russell, at Christmas last, at his cuntry appartments at Cales [Cadiz] made an extraordinary feast; 750 dishes, the first course an ox, roasted whole; 12 hogsheads of punch in a fountaine, in which was a little boy that was in a boat swimming on the punch sea, and delivered it to the companie. The Admirall had 800 men to wait on him : this was very amazing to the Spaniards." (p. 385.)

This Fifth Report also contains an account of the MSS. belonging to the late Rev. H. T. Ellacombe, of Clyst St. George. Most of them are family papers of Newton of Barrs Court, in the county of Gloucester, and are chiefly of private interest. But the early Bristol deeds throw light on the topography and history of that city. Several of the letters of the seventeenth century are of general interest. Here is a specimen :

"1688, Dec. 13 (London ?). Last night we were all alarmed about 1 o'clock. Nothing was heard in our street but *to arms, to arms*, telling us that the Irish, &c., were committing all manner of outrages, as murder, &c. . . . It was a false alarm. . . . The King left us on Tuesday last at 3 in the morning, and my Lord Chancellor (Jefferies) went away about the same time; but the Lord Chancellor was taken yesterday at Wapping in a little ale house, and was brought up to town and committed to the Tower; they have also taken 35,000 guynies besides a great deal of silver which he had sent on board a collier, that was to have transported him beyond sea. To-day, news that the King is stopped near Faversham: he was in a little hoy, and with him Sir Edward Hales and two priests. The King will be in town to-morrow. It

is said that as soon as the news was brought that the King was stopped, the Lords here in town sent a petition to him to return back to Whitehall. The Prince's vanguards are at Brentford, and will be in town to-morrow, and the Prince is at Staynes, and is expected on Saturday." (p. 324.)

Another set of papers connected with Monmouth's rebellion gives an account of the indictment of Francis Creswicke "for talking with the rebels at Kynesham."

Other papers have to do with the manors of Oldelonde and Bitton, in the county of Gloucester.

Mr. Riley gives several extracts from thirty-four documents selected from a collection in the possession of Mr. R. W. Prideaux, of Dartmouth. They are deeds relating to land and houses, dating from the time of Edward I. to that of Henry VI. Some of the rents are curious: "A yearly rent of one pair of white gloves at Easter." (p. 423.) "A yearly rent of 2d. sterling." "A yearly rent of one penny." Another deed grants a tenement to Juliana, late wife of John Cok, "to hold for her life, with remainder to William Waryn and Cecily, his wife, who, after the death of the said Juliana, are to keep the Anniversary of the said John Cok and Juliana, his wife, and of Peter Cok and Margery, his wife, in the Church of St. Clement, at Tonstalle, on the Friday next before Palm Sunday in each year: they to pay in the said church for the priests, the poor, and other necessities in keeping such Anniversary, the sum of 3s. 4d." Dated in the fourteenth year of Henry VI. The last deed mentioned in the Report is from one Ammia Veere, who grants to her mother, Alice, a tenement and garden for "her life; paying to the said Ammia and her heirs one red rose on the Feast of the Nativity of St. John the Baptist; the said Alice, at her own costs, keeping the same in repair." (p. 426.)

The records of the Corporation of Dartmouth are very numerous, and classified by Mr. Riley as charters, volumes, deeds, and miscellaneous documents. One of the deeds of the "twenty-fourth year of the reign of Edward, son of King Henry," grants to Philip Rurde the Mill of Hardenesse, "to hold in tail general, on payment of one rose at the Nativity of John the Baptist; the said Philip having paid 200*l.* sterling beforehand." (p. 599.) The colour of the rose is not specified, as it is in the deed quoted above of the reign of the Lancastrian Henry VI. However, in a deed of the reign of Edward III., a piece of land is granted to one Joan Faillour, "she rendering to the chief lord one red

rose yearly, at the Feast of St. John the Baptist, and to the grantor one halfpenny at the Feast of St. Michael." (p. 602.) The rent of "one red rose yearly on the Feast of the Nativity of St. John the Baptist is to be paid by Walter Sengger by lease of the reign of Henry VI." (p. 603.)

The parish of Alwington, near Parkham, possesses registers dating from 1550, and the Church Rate Book has entries from 1767 to 1824. Mr. Riley remarks:

"The people of Alwington seem at the period in question to have had but little taste for the chase, and in their number few genuine sportsmen probably were to be found. There are numerous entries for the killing of foxes and their cubs, the tariff being at first two shillings, later three, and then five shillings per head. The other animals, the slayers of which were similarly subsidized by the Churchwardens, but at lower rates, were martrels (or martins), greys or badgers (sometimes written 'haggers,' sometimes 'bagges') hedgehogs, fetches or fitches (weasels), orteres (otters), jays, hawks, kits or kites; and at a more recent date sparrows, crows, magpies, and hoops (bullfinches). Thus:

"1807, 'Agreed by the Parishioners of Alwington to pay three pence per dozen for old sparrows, and two pence per dozen for young do., and one penny per piece for hoops, provided they are killed in the parish.' 1809, 'Paid for one old fox, and 6 young, 7s. 6d. For one out shell, 9d.' 1810, 'Mr. Ching for killing two foxes, 10s.' 1811, 'To Mr. Edward Bale for fox ale (payment in ale for killing a fox), 5s. My boys for killing 5 dozen of sparrows, 1s. 0½d.' (p. 597) To which of the two churchwardens 'my boys' belonged is not stated."

COLLECTIONS OF MSS. DESCRIBED IN THE FIRST TWELVE REPORTS
OF THE ROYAL COMMISSION ON HISTORICAL MSS. (1869-1888)
IN THE COUNTY OF DEVON.

OWNER OF MSS.	LOCALITY.	WHERE DESCRIBED.
Earl of Devon . . .	Powderham Castle . . .	Report III. p. 216.
Earl Fortescue . . .	Castle Hill, Southmolton . . .	IX. (Part II.), 403-6.
J. R. Pine-Coffin, Esq. . .	Portledge, North Devon . . .	III. 220, 221.
Rev. H. T. Ellacombe . . .	Clyst St. George . . .	IV. 374-79.
R. W. Prideaux, Esq. . .	Dartmouth . . .	V. 370-86.
Parish of Alwington . . .	Alwington . . .	V. 323-29.
" Hartland . . .	Hartland . . .	V. 423-26.
" Parkham . . .	Parkham . . .	V. 597.
Corporation of Barnstaple . . .	Barnstaple . . .	IV. 428.
" Dartmouth . . .	Dartmouth . . .	V. 571-75.
" Plymouth . . .	Plymouth . . .	IV. 468-69.
" Totnes . . .	Totnes . . .	IX. 203-16.
" . . .	" . . .	V. 597-606.
" . . .	" . . .	IX. 262-84.
" . . .	" . . .	X. 536-60.
" . . .	" . . .	III. 341-50.

The Sixth, Seventh, and Eighth Reports do not describe any collections of MSS. in Devonshire; but the Ninth Report, besides the notice already cited about the collections of the Earl of Devon, gives a somewhat full account of the manuscripts belonging to the Corporations of Barnstaple and Plymouth. I feel that I should be intruding on the provinces of Mr. J. R. Chanter, and of Mr. Brooking Rowe and Mr. Worth, if I were to attempt to summarise these reports. The inspector, Mr. J. C. Jeaffreson, pays well-deserved compliments to the labours of those gentlemen, to whom we of this Association have already owed so much, and hope to owe more. I will merely note that the account of the Barnstaple MSS. is given on pages 203-216, and that of the Plymouth documents on pages 262-284. A supplemental account of other documents belonging to the Corporation of Plymouth, by Mr. R. N. Worth, will be found in the Tenth Report, part iv. pages 536-560.

Neither the Eleventh nor the Twelfth Report (as far as it has been issued), contain any account of MSS. in Devonshire. The richness of the collection of Mr. Pine-Coffin leads one to imagine that there must be a vast quantity of interesting MSS. in this county, whose sons have played so distinguished parts in the history of England; and we may hope that Mr. Chanter's zeal will bring to light even more valuable treasures than those which have found a place in the Reports of the Royal Commission.

W. R. CANON BROWNLOW.

NOTES ON THE EARLY HISTORY OF TAVISTOCK.

BY R. N. WORTH, F.G.S.

(Read at Tavistock, July, 1889.)

THE materials for the early history of Tavistock are singularly scanty. The first event definitely assigned is the foundation of the Abbey, said to have taken place in 961. The earliest contemporary reference is in the *Anglo-Saxon Chronicle*, where, under date 997, we read that the Danes, ravaging these western shores, went "into the mouth of the Tamar, and then went up until they came to Hlidaford, and burned and destroyed every thing which they met with; and they burned Ordulf's minster at Tavistock, and brought unspeakable booty with them to their ships."

This is the first firm step we can take in recorded Tavistock history, and it is as well to note that the earliest form of the name as given in the *Chronicle* is *Ætefingstoc*.

There is indeed a recital, by way of inspeXimus, of a charter granted to the Abbey by Æðelred; but this has to do with the house rather than the town, and does not carry our knowledge of the local history any farther.

The next certain contemporary record is the entry in *Domesday*, which will be found in full in the *Devonshire Domesday* part for 1885, pp. 229-231. The general facts may be conveniently summarized as follows:

The manor had been assessed in the reign of the Confessor at three hides and a half, but there was land for forty ploughs. The abbot had half a hide and five ploughs in demesne, and his villeins a hide and a half and fourteen ploughs. There were sixteen acres of meadow in the low lands by the river; pasture extended ten furlongs in length and ten in breadth; wood two leugas in length and one in breadth. There were on the abbey lands twelve serfs,

seventeen villeins, and twenty bordars or cottagers. There was an abbey mill; and the live stock comprised 26 head of cattle, a packhorse, 12 swine, 200 sheep, and 30 goats.

This accounts for two hides. The remaining hide and a half, which had been held of the abbot in Saxon days by four thegns, was now divided between six men-at-arms, bound of course to succour their feudal lord—Ermenald, Ralph, Hugh, Robert, Ralph de la Tillaie, and Gosfrid. Each had his underlings—serfs, villeins, bordars, or coscets—and, with the exception of the first Ralph, each his proportion of live stock.

These are the Exeter figures. The only difference between them and the Exchequer is, that where the former reckons twenty bordars the latter has seventeen bordars and three coscets.

The manor was worth to the abbot twelve pounds a year, to the men-at-arms five; but there had been a falling off in value of five pounds—two pounds in the abbot's quota and three in that of the men-at-arms.

There are reasonable grounds for the belief that we can identify three of the four thegns' lands in the three "worthys"—Warpisworthy, shortened into Wapsworthy, and corrupted by polite etymologists into Waspworthy; Kilworthy; and Gulworthy. The distinctive character of a "worthy" as compared with a "ton," and its frequent personal association, point to this conclusion; while Warpsworthy in all likelihood preserves the name of its Saxon owner.

So far we have dealt only with the manor, not the parish, of Tavistock; and the possessions of the Abbey enumerated in *Domesday* include in addition to Tavistock proper [Taues-tocha or Tavestoc] Hurdwick [Wrdieta or Wrdiete], Rowdon [Raddona or Radone], Romans Lee [Liega or Liège, taking its prefix from Rumon, the patron saint of the Abbey], and Morwell [Willa or Welle].

Hurdwick had gelded at half a hide, could be ploughed by five ploughs, had eight acres of wood and twelve of meadow, was tenanted by one serf, six villeins, five bordars, twenty sheep, and six goats, and its value had risen from ten shillings to twenty. It was in the hands of the church itself.

William held Rowdon of the Abbey in succession to the Saxon Ulmer. It had gelded for a virgate, could be ploughed by two ploughs, had thirteen acres of meadow and fifty of pasture, was tenanted by one villein, and was worth only five shillings.

Romans Lee was held of the abbot by two under lords—Nigel and Robert. It had gelded for a hide, could be ploughed by ten ploughs, had thirty acres of meadow, sixty acres of pasture, and thirty-eight acres of wood. Nigel had the larger share; and between them Nigel and Robert had seven serfs, ten villeins, and ten bordars, with twelve head of cattle, sixteen swine, a hundred sheep, and twenty-seven goats. The value had increased somewhat, to forty shillings.

Morwell was held of the abbot by Grento, a man-at-arms, in succession to Archbishop Ældred. It had gelded for two hides, could be ploughed by eight ploughs, had four acres of meadow and twenty of pasture, was tenanted by four serfs, ten villeins, and four bordars, and had increased in value from forty shillings to four pounds.

The total acreage here given is 11,931, of which Tavistock manor gives 8696 acres; and as Tavistock parish is 14,018 acres in extent, and the Domesday measurements always fall short of the actual area, there seems no reasonable doubt that the whole of Tavistock parish is thus accounted for.

The total enumerated population, which does not include the monks, men-at-arms, or other free tenants of the Abbey, was 146.

When William's commissioners came round the abbot also held Walreddon [Olwritona], but that was taken from him, because, as the record states, "the English testified that it did not belong to the Abbey on the day on which King Edward was alive and dead."

Such then, I believe, are all the direct materials we have for forming definite conclusions as to the condition of Tavistock at and prior to the Norman Conquest. We may, however, venture somewhat further.

The legendary account of the origin of the Abbey states that the site was revealed to Ordulf and his wife by repeated dreams, and that it was miraculously marked by four rods set in the ground in a wood near his residence. Of course the inference would be—since the town of Tavistock clustered round the Abbey—that prior to the foundation of the house the site was unoccupied, and that the place originated in the monastery. But the name forbids any such assumption. "Tavistock" is distinctly secular—the "stock" or stockaded fortalice of the Tavy valley. Such a name would never have been given to a new ecclesiastical settlement, nor indeed would a "stock" have been founded in the low lands

by the river, however convenient their expanse might be for the seat of a monastic establishment.

It is clear, therefore, that Tavistock must have higher antiquity than is expressed by any record. Unquestionably it was an early Saxon centre of importance—the chief place in the valley of the Tavy. Nor is it difficult to suggest a far remoter origin. As I have said elsewhere:¹

“It is a fact that must have a meaning, if this can only be defined, that nearly all the ancient inscribed stones of Devon are found upon one parallel in the south-west of the county, between Stowford on the north and Yealmpton on the south, passing through Tavistock as a kind of centre. These all give traces of ecclesiastical influence; and two, by the Ogham writing which they bear, proof also of Irish intercourse. They probably indicate, therefore, a period of active mission work on the part of the Irish church, somewhere about the latter part of the fifth and first half of the sixth century.”

Buckland Monachorum, the next parish to Tavistock, south-west, yielded two of these stones—one with an Ogham duplication; a third was found near Tavistock.² Add to this that the adjacent parish of Whitchurch bears this same name in *Domesday*—Wicerce—and there is plenty of evidence of a strong ecclesiastical influence about Tavistock long before the Norman Conquest, the Abbey apart.

The only other material relic of probably equal antiquity in the immediate vicinity of Tavistock with which I am acquainted is the earthwork on the hill near the Kelly College, cut through by the new railroad. It is sometimes called the Roman Camp, but this name is purely fanciful. It has no definite Roman characteristics, and, so far as I can learn, no Roman relics have been found there. The suggestion that it *may* represent the original Tavy-stock should not, however, be hastily rejected. The site is suitable, and of some little strength. More than this one would hardly expect to find in the neighbourhood of such an important and well-defenced town as Lydford, where strong earthworks of unquestionable Keltic date remain, and where the church is believed, on reasonable grounds, to contain some traces of Keltic masonry.³

¹ *Hist. Devon*, pp. 178-9.

² These stones are in the vicarage gardens, where they were placed by the Rev. E. A. Bray: (1) DOBUNNI FABRI FILI ENABARRI (or NABARR only); (2) SABINI FILI MACCODECHETI; (3) NEPRANI FILI CONBEVI.

³ There are earthworks also at Brent Tor, defending the base of the cone.

The local nomenclature is mainly Saxon, but with several Keltic traces. We have woods, leys, hams, fords, tuns; the less familiar wick, worthy, and beer (Saxon, *beora* = a grove); hele, well, lake, burn (a northern type), and the doubtful combe, which may be either Saxon or Keltic. The Keltic elements are mainly compounded, as in *Crelake* and *Crebor*, *Gawton*, *Kilworthy*, *Lamburn*, *Morwell*, *Colcharton*, *Walla-brook*, and possibly *Grendon* and *Grenofen*. The chief peculiarity of the nomenclature is, however, the number of unusual names associated—*e.g.* in addition to those given: *Artiscombe* (? = Arthur's Combe), *Wilminstone*, *Woodovis*, *Crowndale*, *Chipshop*, *Hartshole*, *Sortridge*, *Grimstone* (= the boundary stone), *Ogbear*. There thus seem to have been strong local influences at work of a very distinctive character.

We will now attempt still less certain ground. We have seen reason to believe that Tavistock existed long before the Abbey as a Saxon settlement, and that the locality had some distinctive characteristics at a yet earlier date. Can we assign any reasons why this particular part of the Tavy valley should have become a centre of population in Keltic times?

I think we can, and that we shall find it in the fact that Tavistock is on the line of the Fosseway, which crossed Dartmoor from Exeter on its way to its Cornish terminus at Giano, or Marazion, and passed the Tamar at its lowest ford in the neighbourhood of Hingston Down, probably near Horse Bridge. I have elsewhere given reasons for regarding the great central trackway of Dartmoor as a relic of this road, and for placing the lost Tamara of Ptolemy somewhere in this locality.⁴

If I am right in the assumption of the local route of the Fosseway, the origin of Tavistock at the point where this great central line of communication crossed the Tavy is easily accounted for. The foundation of the Abbey perpetuated what intercourse had begun.

The *Saxon Chronicle* records a battle between the Welch or Cornish and the men of Devon at Gafulford (*not* Camel-ford) in 823, and that is more likely to have been near the Tamar and on the great roadway than elsewhere.

And in any case there can be no doubt that when Ecgbearht, in 835, defeated the combined forces of the Danes and West Welch at Hingston, he marched to victory through

⁴ *Vide* "Notes on the Ancient Recorded Topography of Devon." (*Trans. Devon. Assoc.* xvii. 345-366.)

Tavistock, though we may question the truth of the local couplet, which alleges that—

"The blood that flowed down West Street
Would heave a stone a pound weight."

But the wealth of local legend is another argument in favour of the antiquity and early importance of Tavistock. We have its association with Ordulf, the Saxon Samson and giant, some of whose reputed bones may be seen in the church; with the story of the murder of Æðelwold by Eadgar, in order that he might marry Ordulf's sister, Ælfryth, or Elfrida; and with the legend of Childe the Hunter, whose "lands of Plymstock" the monks are said to have obtained by burying his body in the Abbey when he died in the snow on Dartmoor, evading the Plymstock folk by throwing a bridge across the Tavy, thence called Guile Bridge. (It is strange that there are yet people who believe this story, in face of the facts that the Abbey held Plymstock before the Conquest, and that Guile Bridge is simply a corruption of Guild Bridge, so called from its builders, the Jesus Guild.) Worth little, even worthless, as history, still associations like these have their value when one is trying to bring together all that is known or may be inferred touching the beginnings of an ancient town like Tavistock.

FOUR TAVISTOCK WORTHIES OF THE SEVENTEENTH CENTURY.

JOHN MAYNARD.
THOMAS LARKHAM.

WILLIAM BROWNE.
RICHARD PEEKE.

BY REV. D. P. ALFORD, M.A.

(Read at Tavistock, July, 1889.)

THE defeat of the Spanish Armada was not merely a great national victory, it also represents an outburst of national force and character which shows itself in a general diffusion of individual energy, ability, and even genius, which has no parallel in our history. It is not merely that we have men of such wonderful and varied gifts as Shakespeare, Bacon, and Raleigh, but that the high tone and bright vivacity of the time was so widely diffused. Such poetical collections as "England's Helicon" abound in flashes of true poetry not unworthy of Shakespeare, but written by men of whom we know nothing more than the name, and often not even that. Presently, in the struggle of the seventeenth century, political wisdom was so widespread that an anonymous tractate of the time can excite the unqualified admiration of that universal genius and true philosopher, Samuel Taylor Coleridge. The moral and religious forces are so strong that not only does English pulpit oratory reach its highest level in Donne and Taylor, but able divines, with strong original thoughts, and a forcible way of expressing them, are scattered all over the country. Least of all was there likely to be any want of manliness at such a time. Since it had been proved to demonstration that one Englishman could thrash six Spaniards, heroes were likely to be found in every township.

When every sort of ability and energy was thus spread abroad through the whole land, we are proud to think that Tavistock did not lag behind its neighbours. No; Tavistock,

for its size and position, was well to the front in those days of genius. For Tavistock, not to mention our greatest pride, Sir Francis Drake (Thomas Fuller's ideal of "the good sea-captain"), nor our noblest representatives, John Pym and Lord William Russell; Tavistock, during the seventeenth century, could boast of its eminent lawyer and politician, its able divine, its true poet, and its fighting hero, all of whom have left behind them, not merely a name, but also words worth remembering. Let these worthies march past for our inspection.

First comes our lawyer and statesman, a cousin of Sir Francis Drake, Serjeant John Maynard. A notable man, if for no other reason than because he was a conspicuous figure in English politics for sixty-five years, and those, from a constitutional point of view, the most important years in our history. But notable also because, in spite of a rough sort of consistency, he managed to keep in with one party after another in those most critical times; and having been "Protector's Serjeant" to Cromwell, and "Ancient Serjeant" to Charles and James II., ended his long public career as Lord Commissioner under William and Mary.

Born at Tavistock in 1602, Maynard passed from Exeter College, Oxford, to the Middle Temple. Here he associated with Noy, Selden, and Rolle—men who, like himself, combined great ability with hard work. Here also he learnt, Lord Campbell says, that love of black-letter law which he never lost, and which, according to Roger North, made him find more pleasure in the yearly Reports than in any comedy.

Backed by local interest, Maynard soon became the leader of the Western Circuit, and retained the leadership for fifty years. Combining politics with law, he sat in every Parliament from the first of Charles I. to the first of William and Mary, representing in succession Launceston, Totnes, Newton, Bere-Alston, Plympton, and Plymouth.

In the troublesome times of the Civil Wars, Maynard was a steady but moderate supporter of civil and religious liberty, protesting alike against ship money and the execution of the king; pleading for the privilege of Parliament, but joining Monk and the Presbyterians in bringing about the Restoration. His shrewd care for his own interests often made him indifferent to the claims of others. He was conspicuous in the impeachment of Strafford on the one side, and of Sir Harry Vane on the other. For this he is pilloried in the verses of Roscommon, Strafford's nephew

and godson; and in those of the ill-requited Royalist poet, Samuel Butler. Roscommon writes:

"The robe was summon'd, Maynard at the head,
In legal murder none so deeply read."

Butler, in his witty doggrel, asks—

"Did not the learned Glynne and Maynard,
To make good subjects traitors, strain hard?"

As Maynard was also somewhat greedy and grasping, we need not wonder that Swift should describe him, with his usual candour, as an "old rogue;" "a knave and a fool, with all his law."

Maynard began very early to practise public speaking, because, as he was fond of saying, he considered law to be *ars bablativa*, the art of babblement. But in spite of this, or perhaps because of it, and though he protested that long speeches were the bane of Parliament, the specimens of his own speeches given us in Campbell's *Life* are somewhat tedious. He was, however, never wanting in shrewdness. Objecting to inexperienced young men being set to command our ships, he compared this with the state of things under the Commonwealth. "The question," he says, "used to be, 'Is he a godly man?' and he was employed. I asked them, 'Can a godly man, because he is a godly man, make a watch or a pair of boots?'" Perhaps Cromwell would have answered, "No, sir. But a godly man won't undertake what he can't do; and whatever a man can do at all, he will do the better, because he is a godly man."

All Maynard's learning could not dull his wit, and two capital sayings are reported of him. That bully Jeffreys usually respected the old serjeant; but once, in a rage, he twitted him with his age and consequent forgetfulness of some point of law. "True, Sir George," Maynard answered; "I have forgotten more law than you ever knew." When Maynard came, at the head of his profession, to greet William III. at Whitehall, the king, speaking courteously of his age, then verging towards ninety, said he must have outlived all the lawyers of his time. With happy readiness the old man replied, "If your Highness had not come over to help us, I should have outlived the law itself."

Only retiring from office in May, 1690, Maynard died at Gunnisbury, near Ealing, in October of the same year. He had amassed a large fortune, and by his two grand-daughters and co-heiresses he was ancestor of the earls

of Stafford and Buckinghamshire; but he did not neglect Tavistock and its neighbourhood. At Bere-Alston he founded a charity school for eight free scholars, which is now merged in the elementary schools of the parish. Oliver says, in his *Monasticon*, that in Sir William Pole's time—*i.e.* about 1635—Serjeant Maynard rented and occupied the abbey house¹ here in Tavistock, in which Mrs. Bray says he was born. Our Parish Register records the burial of "Andrew sonne of John Maynard Esq.," on December 23rd, 1641; and our old documents, edited in 1887 by Mr. Worth, give us Serjeant Maynard as one of the feoffees of the Maudlin and Church lands from 1651 to 1679. His fondness for archæology, and his attachment to Tavistock, are both proved by his collection of deeds referring to our abbey. The deeds seem to be lost, but copies are fortunately preserved in Dugdale's *Monasticon*.

Not a hero certainly was our "Ancient Serjeant"—too fond of his fees and too fond of office for that—but still a serviceable man as things go; thoroughly devoted to his profession, and mildly devoted to his country; notable, at least, as not only witnessing the beginning and the ending, but actually taking part in every step of the great constitutional struggle from 1625 to 1689.

Our notable divine of the seventeenth century seems to me a more interesting character than even Serjeant Maynard, though his career was comparatively uneventful. A stroll in Westminster Hall with the "Ancient Serjeant" would have been a treat, and would probably have told us some things about that wonderful time not to be found even in the voluminous pages of Macaulay or Gardiner; but an interview with Thomas Larkham would, I think, have been more refreshing, whether seated in the vicarage study in the winter in his "turned breeches," "shag coat," and coarse shirt of "dowlas," or meditating in the vicarage garden in his "calamanco suit" in the leafy month of June.

Thomas Larkham was vicar of Tavistock from 1647 to 1660. His *Lectures on the Attributes*, now a very rare volume, deserve a place beside the greater work of Charnock. The diary lately republished, and the personal notices bound up with the lectures, give us the picture of a man gentle and childlike, yet strong and versatile, attractive by the singular contrasts both of his life and character.

The vicar was often much dejected by troubles in his

¹ In 1786 a new abbey house was built out of the ruins of the chapter house. (DUGDALE, iv. 492.)

family, and by opposition, not merely from open enemies, but also from narrow and quarrelsome friends. His sources of comfort were, however, numerous and varied, ranging from spiritual meditation, and study of the attributes of the Deity, to the more earthly consolations of planting apricots, or gathering the first roses in the vicarage garden, or even of a game of bowls, which cost him fourpence. Distressed by the "sinful and abusive" pamphlets of his townsman, Nicholas Watts, whose gifts still cheer the hearts of "virgin" brides and "godly" tradesmen, or by the "lewd and loud ly" uttered against him in his own pulpit by his young "neighbour minister," John Howe, of Great Torrington, he draws upon his two best resources, his religion and his humour; he "spreads his troubles before the Lord," and he immolates his enemies in doggerel verses.

Though a Puritan, Larkham was no bigot. He could pray for a blessing on the Thursday evening lectures in the hall of Mrs. Glanville's house, started by Watts and Company, in opposition to his own Wednesday evening lectures in church. He would give money to his servants, as well as to his children, to spend at St. John's Fair. He welcomes a roll of tobacco from Mr. Howard as if it were a gift from heaven, regarding it probably as a sign of goodwill restored, and using it perhaps to soothe his troubled nerves when the excellent Mrs. Larkham had been more "rocky and untoward" than usual. He was a great reader, and, like a wise student, went on adding to his library, in spite of the many claims upon his scanty purse. In this shrewd and homely fashion he justifies his wider culture. "Surely if any man, christian or heathen, Paul or Plato, can help me with a notion, whereby I, living in the Spirit, may come in my humanity to more acquaintance with God, I think I may safely and warrantably enough make use of it."

Larkham had something of the poet's sensibility, though little enough of the poet's art. He seems to have been the first to introduce psalm-singing into our parish church. In trouble or in joy he breaks out into verse. His children go to Plymouth for a holiday, and he can find leisure from heavier duties to write some couplets describing the event, and praying for God's blessing upon them.

And with all this he is a careful man of business, keeping an account of his fees, and even of the gifts in kind made by the faithful, looking well after his farms at Radge and Pixon, the fields in Ford's land, and the mill in Dolvin, and opening a chemist's shop with Mr. Countie when he is turned out of the

Vicarage, in October, 1660. Diligently, too, he does his duty by his many relations; by his sisters still living in the old home at Lyme; by his son George, first at Cambridge, and then in the ministry at Cockermouth; by his daughter Jane, who marries Daniel Condry, and becomes the mother of many generations of Tavistockians; and by poor daughter Patience, who marries Lieutenant Miller, goes with him to Ireland, and is presently left a widow, with children, on her father's hands. The grandchildren too, look to the home at Tavistock for help; and with so many claims upon him, our good vicar has had a hard fight sometimes to make the two ends meet. But he keeps bravely struggling on to the end, ministering to the last, as the cruel laws will let him, to the "poor despised handful" of like-minded folk which he had gathered about him at Tavistock. According to our register, "Mr. Thomas Larkham" was buried here December 23rd, 1669. Nonconformist as he was, it does not need much charity to feel that the parish church is somewhat the more sacred for being the resting-place of one so brave and faithful, so kindly and so childlike, as Thomas Larkham.

And who is this, our next worthy, the little man with thoughtful, far-searching eyes, and an amiable expression passing quickly from grave to gay, and back again from gay to grave? This is our poet William Browne; for brother poets, "Bonny Browne" and "Sweet Willy of the Western Main."

Born and bred by "Tavy's voiceful stream," his eye and thought and feeling were all trained by the beauties of our rivers and moorlands as Wordsworth's were by the beauties of his own lakes. Like Wordsworth too, he carried the impression of these native beauties with him everywhere—to the comparatively tame scenery about Oxford and the dull precincts of the Law Courts, not forgetting them in his foreign tour with Lord Carnarvon, nor even amid the charms of Wilton, graced with the presence of the Sidneys. Picture him, yet a lad, wandering in meadow or wood, by the river's side, or over the neighbouring downs, and awakening thought and fancy, and a high conception of the poet's worth, as he reads with delight the *Faerie Queene* of his master Spenser, or Sidney's *Defence of Poesie*. Picture him in manhood standing by the sluggish Thames in Oxford or in London, but seeing instead the tawny stream, and almost hearing the sweet babbling, of his own impetuous Tavy. For Browne is the most pleasant of pastoral poets—in spite of his antique

myths and personations, his occasional conceits and frequent exaggerations—*because* he describes pastoral scenes at first hand with the direct truth and simplicity that only come from loving familiarity, as they were *not* described by any poet, from the *L'Allegro* of Milton to the lyrical ballads of Wordsworth and Coleridge.

In his own day William Browne was highly commended by the critical Ben Jonson and the learned Selden. He lived on familiar terms with the great Chapman and the sterling, voluminous Drayton. He was the special friend, rather perhaps the envied master, of that unequal poet and excellent patriot, George Withers. Browne was, and is, especially beloved of his brother poets. He gloried in his art; he found keen delight in a well-turned phrase or a tuneful couplet. He was a careful student of the English poets, not merely of Spenser and Chaucer, but even of the little-known Occleve and Joseph of Exeter. Therefore, as he deserves, he has been appreciated by his successors, being carefully studied by John Milton, and much valued by two such thorough poets as John Keats and Mrs. Browning.

Browne's *Pastorals* wander on without any definite coherence; but, like the waters of his "native Tavy," they flow on gaily, and if broken and rough in some places, they are continually falling into pleasant passages of force and beauty. And with all the copiousness and fluency which mark his verse, he is never tedious or common-place. He knows when to stay his hand or change the subject, and Ben Jonson gives him praise especially for this, that his purpose clearly was, not to see *how much* he could write, but *how well*. Like the *Faerie Queene*, *Britannia's Pastors*, whilst they are avoided by the prosaic, will always be read with pleasure by those who have some share of poetic feeling.

But our poet could be humorous on proper occasions, as his verses on Lydford Law show very plainly. How well he could handle grave subjects is proved by the fourth eclogue of his *Shepherd's Pipe*, and the celebrated lines on "Sidney's Sister," the dowager countess of Pembroke, perhaps the most perfect epitaph in our language. These verses, long attributed to Ben Jonson, were rightly reclaimed for William Browne by Mr. Pengelly in our *Transactions* for 1887. It should be possible to make a very pleasant volume of selections, like Walter Scott's of Spenser and Wordsworth, out of the works of our Tavistock poet.

We have no trace of William Browne after 1640. It is hardly likely that the entry in our register, September 27th,

1643—"William Browne was buried"—can refer to him; for as a man of substance, if not as a poet, he would, unless Puritan feeling prevented, have been dignified with the title of "Mr." or "gent." No traditions concerning him survive, and none of the Tavistock Brownes of the present day claim any connection with him. But to those privileged to wander by the banks of the Tavy and the Walla, to enjoy the grand sweep of the Tamar from Blanchdown Woods, or to hear the murmurs of the Tavy from the deep shades of Ramsham, it should be an added pleasure to remember that these scenes of beauty were enjoyed and celebrated, nearly three hundred years ago, by one who knew the England of Shakespere, who was the intimate friend of the great Elizabethans, who was Spenser's most faithful follower, and in whose verses are to be found suggestions at least of *L'Allegro* and *Comus* and *Lycidas*.

Our soldier hero is, of course, "Manly Peeke." He stands before us in the grim, pathetic earnest of real life, in the strong, simple narrative and quaint frontispiece reprinted for us by Mr. Brooking Rowe.² The Peekes or Pikes, spelt in all sorts of ways, abound in our registers and documents from 1540, for two hundred years. Sturdy yeomen or shrewd tradesmen they seem to have been for the most part; but as time went on some rose in the world, whilst others stood still, or dropped behind. Probably there was some marked energy latent in the family before it broke out in our seventeenth-century hero. A namesake, Richard Peeke, being sexton in 1540, did waste three pecks of incense by breaking the vessel thereof, possibly the first exhibition of that strong Protestantism which shows itself so clearly in the narrative of his manly descendant. In 1629 a Ralph Peeke, being churchwarden, was presented to the bishop at Exeter, and excommunicated, at the cost of fourteen shillings and fourpence, "for not makinge of the dore in the churchyard." But, whatever his forefathers and his kindred may have been, certainly our Richard Peeke was a gentleman of Tavistock. He had a wife and children dependent upon him, and was devotedly attached to them; but he could not resist the fascination of excitement and possible glory which war brings with it. Already he had served in Algiers, under Sir Robert Mansell, and earned nothing by it but hard experience. But Drake's spirit of adventure seemed to possess his fellow-

² One Richard Peke was a monk here at the surrender of the abbey in 1538, and received 40s. a year pension. Another, probably our hero's father, was a practising attorney here in 1597. (WORTH'S *Tavistock Records*, p. 94.)

townsman ; and when, in the autumn of 1625, the drums were beating for the expedition to Cadiz, "cables could not hold" him, but with "many heroic spirits he must adventure therein his "honour, life, and fortune." So he joined as a volunteer, that, like other "worthies, he might by his "example encourage the common soldiers to honourable darings."

After the capture of the Fort of Puntal, Peeke landed to see the country, and gather oranges for his captain. Being surprised and taken prisoner, he spent some months in Spain, running many risks, enduring many hardships, but at last gaining his liberty, and achieving renown by his wonderful feat of arms, in which, with his "old trusty friend," the quarter-staff, he defeated "three Spanish rapiers and poniards." King Philip offered him service by land or by sea, but Richard begged off. Probably he had had enough of fighting, and, like the generals of the early Roman Republic, and the soldiers of the Commonwealth, was ready, with all his military daring, to withdraw from the excitement of war to the quiet routine of private life. Restored to his anxious wife and children, he seems to have lived a contented and useful life here in Tavistock, not neglecting social duties ; for our pewter flagons tell us that he was churchwarden in 1638 ; not exempt from domestic sorrow, for, as our registers prove, he lost his wife Abigail in 1643, and a son Richard in 1655. It would appear that he married again, and this time a widow, with children of her own ; for Larkham tells us in his diary, August 24th, 1658, "I preached at the burial of Richard Peek's wife's daughter, and had 10s." He had also preached a funeral sermon for Richard Peeke the younger in 1655, and received for it the same fee of 10s. There was no other Richard Peeke buried until June 13th, 1690. If this was our hero, he must have equalled in longevity and bodily vigour his fellow-townsman, Serjeant Maynard.

Like our efforts in the Soudan a few years ago, our expedition against Cadiz was redeemed from contempt by the pluck of our soldiers and the heroism of one man. Gordon's noble self-sacrifice at Kartoum, and Peeke's manly prowess at Xeres, restored to Englishmen the calm self-confidence which is indeed their birthright, but had been rudely shaken by mismanagement and misadventure.

On his return, Richard Peeke wrote that vigorous lifelike story of his adventures, which has been re-edited by Mr. Brooking Rowe and printed in full in the first volume of Arber's *English Garner*. The story was too popular to lie buried. It was noised abroad, turned into ballads, and very

soon it was made the central interest of a capital drama. This play—*Dick of Devonshire*—was evidently written by no mean hand. Printed for the first time in Mr. Bullen's *Collection of Old Plays*, in 1883, it is now again out of print. Mr. Bullen kindly lent me his own copy, and I have read it with so much pleasure that I wish it could be reprinted by itself in pamphlet form, for the gratification of Devonshire generally, and of Tavistock in particular. It is an admirably-written play, deserving all the praise bestowed upon it by Mr. Bullen and Mr. Saintsbury. Judging from its pleasant, manly tone and easy workmanship, it was probably written, as Mr. Bullen suggests, by that excellent, sweet-tempered dramatist, the "prose Shakespeare," Thomas Heywood. The under-plot has the defect common to nearly all the playwrights of the time except Shakespeare—in *Henrico* it presents us with a moral monster who changes his character as easily as a man changes his coat. Apart from this defect, the play is as wholesome as it is lively. All the parts referring to Richard Peeke (here, as often in our registers, spelt Pike) are extremely good. They follow his narrative closely; and yet, without bombast or exaggeration, give fresh life to both character and action. The skill of an expert is shown in the careful fitting of the language to the occasion, from the rollicking prose of the fighting scenes to the dignified blank verse of the court and the prison. In the second scene of the first act we have a capital description of the Spanish Armada, and of its immediate occasion when

"That glory of his country and Spain's terror,
That wonder of the land and the sea's minion,
Drake, of eternal memory, harrowed th' Indies."

I do not know whether it could come within its operations, but it seems to me it would be a good work for the Devonshire Association to reprint *Dick of Devonshire*, so that our "Manly Peke" and the fine play that celebrates him may be as widely known as they deserve to be.

Thus our four worthies have passed before us, widely differing in character and in merit, but still all remarkable enough in their own ways to prove, I hope, that in those seventeenth-century times of widely-diffused genius, Tavistock could hold her own with any other town of like size in the country.

EARLY NONCONFORMITY IN TAVISTOCK.

BY EDWARD WINDEATT.

(Read at Tavistock, July, 1889.)

FORMER papers on the subject of Early Nonconformity in various places in Devon have, I think, shown that this subject contains much which is of more than local or sectarian interest, and this will be found to be true in the case of Tavistock.

It would be strange indeed if the town which returned John Pym to Parliament, and numbered among its principal men Sir John Maynard, the eminent lawyer, distinguished as much for his patriotism as his integrity, had not had in its midst those who favoured the Puritan party.

Dr. Oliver's *Monasticon*, in the account of Tavistock Abbey, gives a "List of the Vicars of Tavistock," and from this list we learn that, on the death of Tristram Clearke, George Hughes succeeded to the vicarage April 7th, 1638, and that on March 27th, 1661, Samuel Brown was admitted "ad vicariam nunc vacantem."

George Hughes, B.D., was appointed to the vicarage of Tavistock by Mrs. Maynard, mother of Sir John, she obtaining the presentation to the living from the patron, the Earl of Bedford.

When the war between Charles and the Parliament broke out, Tavistock was made a garrison for the king; but the governor gave Mr. Hughes a pass to Exeter, then garrisoned by the Parliamentary forces.

Shortly after this he was presented to the living of St. Andrew, Plymouth, and was instituted and inducted by Dr. Brownrigg, Bishop of Exeter; and for eighteen years held the living, being ejected in 1662. As was the case in many other towns, during the troubles of the Civil War, the admissions to livings were loose, and persons were appointed, but in many cases did not receive episcopal institution and

induction; hence the reason for no name appearing in the "List of Vicars of Tavistock," given by Dr. Oliver in the *Monasticon*, between Hughes, who must have left Tavistock some time prior to 1644, and the appointment of Samuel Brown in 1661.

In April, 1648, the Rev. Thomas Larkham, M.A., of Jesus College, Cambridge, came with Sir Hardress Waller's regiment, of which he was chaplain, to Tavistock. Mr. Larkham was born at Lyme Regis, Dorsetshire, August 17th, 1601, baptized August 20th. From 1626-39 he was incumbent of Northam, Devon, the Registers of which are duly signed by him for that period; and it would seem that his Puritanism brought him so much persecution that he fled to New England, where he remained till 1642.

In his work on *The Attributes* he thus refers to his persecutions:

"I confesse it was very greivous to me that had been so tost from post to pillar in the time of the Prelacy, put into the Star Chamber and High Commission, at one time, a Petition delivered to the King's own hand against me with twenty four terrible articles annexed imputing Faction, Heresie, Witchcraft, Rebellion, and Treason: Articles in the Consistory Court at Exeter, at the same time under a suit of pretended Slander for reproving an Atheistical wretch by the name of Atheist, at the same time Purssevants one upon the back of another no less than five at several times."

He seems to have lived at Crediton for some time, and his wife was from that neighbourhood, and the daughter of a schoolmaster of Crediton. Mr. Larkham owned property at Crediton.

Mr. Larkham's diary, from 1647 to November, 1669, is still preserved, and in 1871 was published by the Rev. William Lewis, late of Cockermouth; and in 1888 a second edition came out, published by Mack, of Bristol. I am indebted to that work for very many of the particulars respecting Mr. Larkham contained in this paper.

The original diary is a quarto of more than 230 pages, of which some, curiously enough, contain "Christenings and Burials" for the year 1616 at the parish church of East Greenwich; others are filled with recipes bearing upon human disease and upon art; others show names, residences, professions, trades, and signs of many London citizens in the year 1598; and others again detail the farming accounts of Mr. Larkham's son George, who was ejected for Nonconformity from the living of Cockermouth, when he farmed at

Tallentire, after the Five Mile Act had ceased to operate. About seventy pages contain the everyday-life diary of Thomas Larkham, of Tavistock.

Even during the Commonwealth Mr. Larkham had troublous times to go through. In 1653 he records in his diary, under date June 1st—

"This day twelve month I had the doors of the Parish Church shut up against me by Hawksworth a late trooper in the King's army chosen a little before to be Churchwarden and confirmed by Glanville and others. I have been this year exceedingly persecuted by arrests in the Committee for plundered Ministers by indictments for a supposed riot with divers of my brethren to the expense of at least £50 in charges. Yet out of all the Lord hath delivered me blessed be His name."

And then he adds—

"I am at present owner of no money but 10/- destined to the expenses of the following week."

Two days after occurs the following commonplace entry in the diary:

"June the third I pluckt in my garden at Tavistock the first rose."

The good people of Tavistock 200 years ago appear to have been as famous for their hospitality and friendliness as now; for Mr. Larkham records in his diary many a present from his parishioners. Among them are the following:

<i>"Gifts from February 17th, 1650.</i>		Value.		
		£	s.	d.
Roger Jakeman, shots	.	0	0	4
Stephen Bloy's father a capon	.	0	1	0
Feb. 21. Elizabeth Toller, dish of Butter	.	0	0	8
Of Richard Keagle a Turkey and another				
Fowle both worth	.	0	2	0
March 1. W. Keagle sent Raspberry pies	.	0	1	6
" 5. John Trowt, two seams of wood	.	0	2	0
" 11. Thomas Pennington, pork	.	0	2	0
" 20. Mr Leere, half-bushel of wheat	.	0	6	8
" 28. Mr Edcombe, butter	.	0	0	4
April 11. Mr Elizabeth Row, a loin of veal	.	0	1	4
" 17. Margaret Condry, shoulder of pork				
and pies.	.	0	1	2
" 19. T. Pennington, ribs of pork	.	0	1	0
Judith Liar (or Lyer) 10 buns	.	0	0	10
Jeremiah Penny, a lemon and an orange	.	0	0	3
		£1	1	1

And in 1653 he records further gifts, and notes his good wishes for the givers:

"November 30th The wife of William Hodge brought me a fat goose: Lord do them good! Ed Cole sent by his daughter a turkey: Lord accept it. December 2nd Sara Trowt a dish of butter: accept Lord! Dec. 6th Margaret Sitwell would not be paid for 2½ lb of Butter; is she not a daughter of Abraham? Father be pleased to pay her! Walter Peeke sent me Dec. 14th a partridge and William Webb the same day pork and puddings; Lord forget not! M^{rs} Thomasin Doidge (Lord look on her in much mercy) Dec^r 19th gave me 5^s. January 25th (1653) M^{rs} Andry sent a bushel of barley malt for housekeeping; Lord smell a sweet savour. Patricke Harris sent to me a shoulder of pork; he is a poor ignorant man: Lord pity him."

Later on we read—

"John Russell's maid brought 3 chicken," and "October 21st (1658) M^r Howard sent me a little roll of tobacco. O that God would show him mercy."

In the debit column is the entry, "To Esquire Howard's boy 6^d," probably this was the C. Howard (? G.) who, January 18th, 1661, arrested Mr. Larkham.

Mr. Larkham's lot at Tavistock, prior to his ejection from the living, was not a smooth one; for the diary records lawsuits with parishioners and disputes with his Puritan brethren. One especial dispute, which occurred in 1656, with the celebrated John Howe, of Torrington, is thus recorded:

"Jan 16 being the day of the eclipse of the sun M^r John Howe, Minister of Great Torrington had been to preach here at Tavistock: who most fiercely lashed at me in his sermon about the improper obedience of such as were truly gracious. I wrote to him that I would make good what I had preached the next lecture day, and against which time there was great riding and sending to gether the Ministers of the county together in hope that I should have been swallowed up."

"Jan 23rd I preached upon the same text M^r Howe preached on the week before: and after sermon a conference in the parish Church; and in the afternoon among the Ministers in private. I acknowledge thankfully God's hand over me. We all parted lovingly at the last."

John Howe was at this time in his twenty-sixth year, Thomas Larkham in his fifty-fifth, so that *prima facie* there was lacking to the elder that respect and reverence due from the younger.

The church in which the sermons were preached and the

conference took place would be of special interest to Howe, whose father-in-law, George Hughes, had ministered there.

In one of Larkham's works (*The Attributes*) he mentions the dispute with Howe, and remarks: "I had a gown on my back and universitie degrees before he could read English long."

It is well, however, to know that after the conference in the church all ended lovingly; and no doubt the memory of the conference with Thomas Larkham in the parish church of Tavistock when he was a young man never left Howe, and helped to be a check on his early controversial temperament.

One Nicholas Watts also troubled Mr. Larkham not a little. On April 20th, 1658, Mr. Larkham refers to the coming to Tavistock of a book written principally by Watts. "The authors' names that own it being written in capital letters show them capital offenders yet ashamed to write their names at large." He says it was a heap of trash, full of his slanders, calumnies, false accusations, written in extreme malice and revenge and wrath of pride.

In October, 1657, Mr. Larkham records:

"I am out in printing 'Naboth' £1 10 besides what I received for some."

It must have been this book or pamphlet which called forth the book from Watts and his friends. In 1883, in a second-hand catalogue, Larkham's book is thus referred to:

"Naboth in a narrative and complaint of the Church of God at Tavistock and especially of and concerning Mr Thomas Larkham 1657."

Watts's work is thus described in *Bibliotheca Devoniensis*:

"The Tavistock Naboth proved Nabal: an answer to a narrative by Thomas Larkham in the name of the Church of Tavistoeke in Devon. By F. G. D. P. N. W. W. H. &c. 4to London 1658. B. By Francis Glanville, Dig Polwhele, Watt Godbear, Nic Watts, W^m Hore &c."

November 30th, 1658, Larkham records:

"I had sight of Watts his second book very sinful and abusive. I do humbly spread it before the Lord."

This book is evidently the one thus described in *Bibliotheca Devoniensis*:

"A strange metamorphosis in Tavistock or the Nabal Naboth improved a Judas, set forth in Reply to a scurrilous Pamphlet called Judas &c. 4to London 1658. B. M."

What the scurrilous pamphlet entitled *Judas, &c.*, was does not appear, nor on which side it was issued. In 1659 a secession took place, which is thus recorded :

“Watts and his confederates have set up a Lecture in opposition to me and the Church (as I conceive) and in prosecution of his prancing rebellion; in the Hall of M^r Glanville's house on Thursdays: it was begun October 20th by M^r Cove & the week following seconded by M^r Polwhela. So let it prosper as it is of God and may be for the salvation of poor souls.”

In April 17th, 1660, Mr. Larkham's opponents brought their complaints before the Justices, and he records :

“Alls turned to love. All is husht & the Lecture on Wednesday as formerly and I desired to admit others to preach which I have many years offered and desired.”

In later life Mr. Watts is said to have regretted his disputes with Mr. Larkham, and spoken of his own pamphlets as idle and wretched.

This same Nicholas Watts by his will, dated February 17th, 1674, gave the rents of certain houses and lands to trustees to pay £3 yearly to Mr. Obadiah Hughes, 40s. yearly to Mr. Thomas Martyn, 40s. yearly to Mr. Thomas Travers, and £3 yearly to Mr. Samuel Tapper, and the rest to other godly people, 20s. being reserved for a dinner to the trustees. The five annuitants were ministers. Obadiah Hughes was son of George Hughes, the former vicar of Tavistock; Martin was lecturer at St. Andrew's, Plymouth; Travers was also at one time lecturer there and assistant to George Hughes—he was ejected from St. Columb Major, Cornwall; Samuel Tapper was ejected from St. Merryn-by-Padstow, Cornwall, and afterwards resided in Exeter; and Tickle was a relative of Watts, and Mr. Larkham refers to his preaching in Tavistock in 1659, and that he did not preach candidly, and flew out into some scathing expressions. He became incumbent of Withycombe, East Budleigh.

Mr. Watts named among his trustees Mr. Martyn, Mr. Travers, Mr. Flavell, the celebrated Nonconformist divine of Dartmouth, Mr. Flamank, one of the founders of Nonconformity in Tavistock, mentioned hereafter, and Mr. Tickle. Part of the rents was to be devoted to the purchase of Bibles and books of divinity, to be given away in the church to poorer householders. On leasing the property the fines were to be distributed to two or three of the poorer sort of tradesmen, or upon some hopeful young men newly married

and set up in trade to help them to a stock; such as feared God and professed religion to be preferred. Other rents were to go to five religious and godly men within the county of Devon, and another portion was to be given yearly to some sober, hopeful youth of Tavistock that should be fitting himself for the University, and the rest to such religious maidens as were of the poorer sort and of good report, towards raising them a marriage portion.

Not having episcopal institution to the living of Tavistock, Mr. Larkham was cited before the Justices on October 19th, 1660. He thus records it:

“October 19th I was before the Justices—five of them—nothing concluded on but my binding over to the Assizes and to bring my Counsel next Friday.”

Between the 19th and Sunday 21st the wish of the patron of the living, the Earl of Bedford, was conveyed to him that he should resign, but he was allowed to preach once more. He says, “The Lord’s-day, October 21st, I left mine employment of preaching in fear and upon demand of the patron;” and his son George was ejected from his living, All Saints, Cockermouth, on Thursday, 15 November, 1660, “by the violence of Sir George Fletcher.”

Whilst some deserted him, there were many who stood by him; and he records in his diary many presents, among which were the following:

“Col. Bennett sent me a Bushel of wheat, John Russell a very good turkey, Mary Charles a wood Dove and John Son of Richard Peek sent two Woodcocks. M^r Robert Benart came of purpose to visit and comfort me. John Brownsdon’s wife sent me a capon.”

January 18th, 1660–61, Mr. Larkham was made prisoner by Colonel Howard, and had a guard of six soldiers placed in his house, and the following Monday was conveyed to Exeter gaol, where he remained eighty-four days. During his imprisonment Mr. Daniel Condry, of Tavistock, who had married his daughter Jane in 1652, took care of his family.

On May 31st, 1661, Mr. Samuel Brown, the new vicar, took up his residence at Tavistock, and was enthusiastically received. He had met with an accident on his journey there, the vehicle which brought him having upset, and he was unable to conduct service the first Sunday after his arrival.

February 7th, 1662, Thomas Glanvill succeeded, on Brown’s resignation.

A very curious error appears in the diary about the time of Mr. Larkham's ejection. He refers to his marriage as having taken place June 3rd, 1622; but I extract the following from Vivian's *Exeter Marriage Licences*, p. 77, col. 1:

"1622 June 7 Thomas Larkham Gent of Shobrooke and Patience Wilton daughter of George Wilton Schoolmaster of Crediton."

The entry of the marriage in Shobrooke register itself is:

"An^o 1622 Thomas Larkham and Patience Wilton were married the 10 of June."

The references to Mrs. Larkham in the diary are very meagre, and it would not appear that the marriage was an altogether suitable one. Once he says, "O my poor, rocky untoward wife!" and again, "O my unsuitableness to her! Lord help!"

Their daughter Jane, as mentioned before, married Mr. Daniel Condry, of Tavistock, draper. The entry of the marriage in the Tavistock registers is:

"Marriage December 1652. 17 M^r Daniell Condry and M^{rs} Jane Larkham married."

And the following September is the entry of the baptism of their child:

"Baptisms Azarel the daughter of M^r Daniell Condry and M^{rs} Jane his wife was borne September the one and twentieth baptized the 16 of October 1653."

In 1728 a William Condry was one of the examiners of the Tavistock parish accounts.

August 22nd, 1661, Mr. Larkham records his riding to Exeter Assizes, and being put off again, in regard to his traverses of the Indictment, until Lent Assizes, March 19th, 166½. He says, "I have been in bonds and under imprisonment in both gaols; viz., at the Castle and South gate and under the Marshal's power, *ut cum jure* in Exeter and upon recognisances with sureties from October 19th, 1660, until March 17th, 166½," about one year and twenty-one weeks, all his means to the value of nearly £200 being kept from him.

This persecution broke up Mr. Larkham's home, and he went to reside with his son-in-law, Mr. Condry.

Finding, however, that it was dangerous to remain in Tavistock, he left in April, 1663, and was absent a year;

and during his absence the Earl of Bedford, by his steward, took away the mills Mr. Larkham had bought of Mr. Leere, who had a lease from the earl. He had given £100 for the property. How this arose does not appear, and it is the more unexplainable from the fact that the Countess of Bedford solicited the earl to allow Mr. Larkham and his Puritan friends the use of some vacant rooms in the Abbey, and they were granted the free use of the Refectory as a place of worship. The earl also ordered an annuity of £10 to be paid for promoting the objects of the society. In the Refectory then the Nonconformists met, and worship was conducted upon Independent principles by Mr. Larkham; and there are entries in the diary of payments to him by the deacons between 1660 and 1669, showing him to be first Independent minister and founder of Nonconformity in Tavistock.

In 1664 Mr. Larkham, like many of his Nonconforming brethren, entered into business, becoming partner with Mr. John County, or Countis, an apothecary in Tavistock. The profits appear to have been very small, but many of his old friends in Tavistock and the neighbourhood continued to help him with presents. Soon after he became sole proprietor of the business, and for a time was allowed to rest quietly, but the persecution was renewed.

In May, 1665, he records:

"This day it was told me that yesterday the 28th May Young Preston of Maritavy, officiating at Tavistock pronounced me Excom: by authoritie from young Fulwood now A'deacon of Totnes. Consider O Lord these fools and pity them; for they know not what they doe. Suffer not Thy great name to be (so) taken in vaine."

In January, 1666, the Five Mile Act drove him from Tavistock, and he handed over his shop, and does not appear to have resided permanently in Tavistock again till September, 1667.

Mr. Larkham died December, 1669, and his burial is thus recorded in the Tavistock Register:

"Burials December 1669. 23 Mr Thomas Larkham buried."

It would seem that an attempt was made to prevent his burial in the church; but the steward of the Earl of Bedford interfered, and he was buried in the part of the chancel which belonged to the house of Russell.

Mr. Larkham's works are as follows:

The Wedding Supper. A 12mo volume, published in 1652. Three hundred copies were bound, and some sold at one shilling; others were presented to friends.

"*A Discourse of Paying of Tithes.* By T. L., M.A., Pastour of the Church at Tavistock, in Devon. Together with an Appendix by way of apology for the reasonableness thereof. London: Printed by T. R. and E. M., and are to be sold by Francis Eglesfield at the signe of the Mary-gold in Pauls Church Yard. 1656." This book contains a dedication to Cromwell.

In 1656 he also published a 4to volume of sermons, entitled "*The Attributes of God Unfolded and Applied.* London 1656." He records in the last leaf of the book containing the diary their receipt:

"Received from London Feb 18th 1656 48 Books bound and eight unbound of the 'Attributes of God' printed by F. Eglesfield. I paid for Carriage to Exeter and from Exeter here in all 14^s. And paid him in London £10 in money and books in all £10 14^s."

The bound copies sold for 4s., the unbound for 3s. A copy of this work, kindly presented by Mr. Greenfield, is preserved at Tavistock Church.

Mr. Larkham was succeeded by Mr. Pearse, who had been ejected from the living of Dunsford, Devon. He continued at Tavistock until 1688, when he went to Ashburton, and was one of the founders of Nonconformity in that town. His tomb is in Ashburton Churchyard, and in the Congregational Chapel there is a monument to his memory.

Under the Indulgence of 1672, Mr. Larkham's son-in-law, Daniel Condry, took out a licence for his own house, and also for the New Meeting-house, Tavistock; and John Mall also took out one for his house at Tavistock.

Michael Taylor, who was ejected from Pyeworthy, and had been assistant to Mr. Humphrey Saunders at Holsworthy, was, in 1672, licensed as a preacher at Tavistock. After the Revolution of 1688 he had a public meeting-house at Holsworthy, and died there May 26th, 1705.

The late Mr. R. Dymond's "Early Records of the Society of Friends" (1873) contains entries respecting a meeting-house in Tavistock. They are as follows:

"1702 To Richard Hingston for ye rent of a
house to meet in at Tavistock . . . 1 04 0"

"9. 12mo. 1740 A Licence to be obtained for a Meeting in a house at Tavistock, there being a Friend there of good repute settled there as Steward to the Duke of Bedford, namely Jarvis Knight."

Premises were, up to 1873, held under lease from the Duke of Bedford for a Friends' meeting-house.

Mr. Pearce, who followed Mr. Larkham, was succeeded by Mr. Henry Flamanck, ejected from Lanivet, Cornwall. He died in 1692, and his co-pastor, Mr. Jacob Sandercock, then became sole pastor; he had previously been assistant to R. Saunders, of Kentisbere. He died December 24th, 1729. During his ministry the congregation numbered 600, and included twenty-two county electors and forty-one borough electors.

He was succeeded by Mr. Peter Jillard, who established a Charity School in Tavistock. He left in 1741, and in 1744 Samuel Merivale, the first member of that family to settle in Devon, became pastor. He was educated by Dr. Doddridge, and he remained at Tavistock sixteen years. In Dean Merivale's paper, in our *Transactions* for 1884, on "Herman Merivale," is a reference to his ancestor, the Dissenting Minister at Tavistock.

Mr. Samuel Merivale left Tavistock, and became a Tutor of Divinity at the New College at Exeter. Theophilus Edwards, a Welshman, succeeded Mr. Merivale in 1772, and continued there till 1794, when Mr. William Evans became pastor. About this time there was a secession, and another church was formed of those who did not agree with the Unitarian principles taught. The first settled pastor of the new cause was Rev. William Rooker, father of the late Alfred Rooker, of Plymouth. Both the old and new causes still exist. The old Abbey Chapel (Unitarian) occupies a portion of the Abbey premises. The graveyard in front is consecrated ground, and the room belonging to the chapel, entered through the gallery, sometimes thought to be the Treasury of the Abbey, is over the Buttery, and still contains traces, in the carved woodwork of the roof, of its ancient character. The Buttery is now occupied in connection with the Bedford Hotel.

A COTTAGE ART SCHOOL IN A DEVONSHIRE VILLAGE.

("WHOSE SEED IS IN ITSELF.")

BY J. PHILLIPS.

(Read at Tavistock, July, 1889.)



MARY BULLEY'S COTTAGE.

From *Newton News*.

"Here's Coffinswell and Kingskerswell!
And here's for Abbotakerswell too!
'Tis where we merry craftsmen dwell,
And wondrous is the work we do."

I AM desirous of making clear the continuity of the work that I seek to promote in bringing this subject before the Association, as I have done from time to time under various headings.

In the year 1867 village art classes were established in Bovey Tracey, where the local conditions were peculiarly favourable. The extensive pottery works in the parish furnished intelligent students, and the resident gentry supported the work. In 1868 an Art and Industrial Exhibition was held in the vestry hall; the results arrived at were entirely satisfactory and encouraging.

In 1870 a similar exhibition was held in connection with the Newton Abbot Art Schools, and inducements were offered to artizans in various branches of industry to do "the best they knew."

As I mentioned in my paper read last year at Exeter, I brought the work of these exhibitions, and proposals to extend them, before this Association at the Dartmouth and Devonport Meetings, in the years 1869-70.

I fear I must admit rather desultory work followed during the next few years. Events have shown, however, that it was not without fruit, since students of those days are the teachers of to-day in their native village.

The years 1881-2 saw an energetic revival in the Newton Art Schools, and the Art Exhibition connected therewith. Thence originated the Cottage Art Schools of the Kerswell villages on their present basis, which is a great advance upon that of the earlier village schools. During the past winter a school has been opened in John Easterbrook's cottage, in Coffinswell. The number of young people attending the three classes last Christmas was sixty-four. In two of these villages the school was held in very unpretending but picturesque cottages, a large room being hired in the third village. Thus in neither of these places have the ordinary village school-houses been used for the purposes of our art classes.

The three points I seek to emphasize are—

- 1st, Cultured work;
- 2nd, Cottage schools;
- 3rd, Village exhibitions.

1. In the exhibitions to which I have alluded, there was much for promoters of education, or of any sort of art training, to learn. Not once only, but on each occasion, was attention directed by well qualified judges to the obvious lack of knowledge of their work displayed by exhibitors who had merely done the "best they knew." The point is perhaps most pithily put by a comment made on a remark, that these exhibitions afforded opportunities of "showing what Devonshire men can do." "Yes, and how badly they

do it." It is not to be expected, especially since the system of apprenticeship has broken down, that untutored youth should produce cultured work, based on principles of construction and of art, that they have never studied.

2. It is a point, then, of first moment to induce the workers to exercise themselves in the principles on which their work must rest, to yield results possessing art merit. And these exercises must be presented in such wise that they will readily attract and assimilate. Our young villager, when he has passed the "standards" that sapient legislators have set up for his confusion, reckons that he has finished with "'zaminations" for the rest of his days; and if in any form such an abomination is presented to his notice, "not if he knows it" will be his sentiment, and a suspicion of such things ever hangs around the doors of the school-house. Circumstances beyond our control placed the board school in our village of Abbotskerswell out of convenient reach, and we were thus driven into a cottage that was kindly placed at our disposal. This proved to be the crowning of the edifice. No odour of "standards" hung around its rose-covered walls, no "scent" of 'zaminations was found to be secreted in the thatched roof that covers the cottages of Mrs. Bulley and her neighbour, John Brimblecombe, nor hanging about the entrance. Set out with trestle-tables and "stools," brightly lighted, and with the cheerful blaze of a log-fire, the "Art School" invited our young people to a "pleasant evening." Twice weekly have twenty-five of them, ranging from eleven to twenty-three years of age, met in this cottage during the past winter. Freehand and coloured drawing became immediately attractive; their designs were worked out and applied at home on wood, copper, brass, ironwork, and needlework. In this last the endeavour was to bring suitable decoration in colour into the cottage homes of the village; a design was worked out in the school for the half curtain of the cottage window, and then carried out in the house on the cheapest of muslins with highly satisfactory results. The ironwork has brought fame and profit to our village smithy, and the parish church of Kingskerswell is adorned with wrought iron lanterns that contain the lamps for lighting the church, made by our village blacksmiths. The decoration of pottery has given regular employment to a number of young villagers, and the wood carving has brought an order from the Princess Louise for a carved chest "after" the old family chest of Churchwarden Vening. Mr. Vening's family have farmed their own freehold estate in

this parish for the last four hundred years. Visitors to our Cottage Art School have been greatly entertained and interested by the bright and merry group of young people who greeted their entrance. It has been a frequent custom to close the evening with glee and song and chorus. For this use a special book was arranged, containing such songs and ballads as "The Farmer's Boy," "Hearts of Oak," &c., and a special song written for the three villages that are united in this work, and which I append to this paper.

3. Village Art Exhibitions are an invaluable aid to industrial art culture, though there must be difficulty in carrying them out strictly in every village. I so name them on the ground that such as that recently held in the village of Kingskerswell excellently answered the desired end, and could be easily arranged in any suitable centre of a group of villages where Cottage Art Schools existed. The primary object of these exhibitions should be instruction by bringing before the rural art students examples of decorative art work such as would be within their power of production, and more opportunity would thus be afforded of placing before our rustic populations works of art of a higher order than would otherwise be within their reach, and which the degree of culture that the art classes foster would enable them to enjoy and appreciate. The secondary object of these exhibitions would be the encouragement of the members of these schools, and exciting and maintaining their interest, and that of their immediate friends. This last is found to be, and rightly so, the most potent factor in this work. The sixty to seventy young people of the three villages that I represent are stimulated most by the interest, the pride, and the pleasure that is taken in their work by their parents, "their sisters, their cousins, and their aunts," though they are by no means oblivious to the appreciation of others, especially displayed in the *midst* of their surroundings. Thus it is seen that these advantages and aids can only be secured in *very* local exhibitions. A visit to Paris or London would not produce an equally useful result.

The labour entailed in this scheme of art training is not great, and is more than compensated by the entertainment and pleasure it affords, to those who will undertake to organize and promote it in their immediate vicinities. The required apparatus is exceedingly simple and inexpensive, equally with the teaching. The elder and advanced students take pride and pleasure in helping their more youthful neighbours. We even hope in these particular villages that we may soon

have a staff of trained teachers amongst our young men, who may be ready to undertake the organizing of similar classes in other villages.

It is a feature of this work that not only is the intelligence aroused, but courtesy and good manners follow in the wake, though we number amongst the students of our Cottage Art Schools the liveliest members of our respective communities. Numerous visitors have remarked on the general influence visible in our village of intelligence and courtesy, qualities for which it must be admitted we were not distinguished at the 1885 General Election. The interior decoration of our cottage homes is showing increasing evidence of culture, and the ornaments now being introduced possess some amount of art merit.

One of the three objects for the advancement of which the Devonshire Association exists is Art. We have nothing to show that a line is drawn at the work of presidents of the Royal Academy, nor even that it is drawn at pictorial art. It is legitimate, then, for the Association to seek the advancement of decorative art, and—until an excluding line is drawn—of such minor art work as that which is being introduced into some of our Devonshire villages.

The "advancement" of the minor arts in our rural districts is extending to our village populations similar pleasures to those enjoyed by the members of this Society at the annual meetings. And in an assembly such as this, gathered from all parts of the county, there must be many who are well qualified, and to whom it would afford keen enjoyment, to organize and carry out Cottage Art Schools in many Devonshire villages.

It is held by some, whose opinions are worthy of respectful consideration, that Art, like Science, should be pursued for its own sake, and with no other object nor intent—solely for the pleasures and delights the pursuit affords. I will not presume to oppose my own views to this, but will venture to quote Mr. Ruskin. In his inaugural address, at the opening of the Cambridge School of Art, in 1858, Mr. Ruskin, speaking of the ruins of a pleasure villa at Turin, said :

"Thus end all the arts of life, only in death ; and thus issue all the gifts of man, only in his dishonour—when they are pursued or possessed in the service of pleasure only. . . . This, then, is the great enigma of Art History ; you must not follow Art without pleasure, nor must you follow it for the sake of pleasure. And the solution of that enigma is simply this fact, that wherever Art has been followed, only for the sake of luxury or delight, it has

contributed, and largely contributed, to bring about the destruction of the nation practising it; but wherever Art has been used *also* to teach any truth, or supposed truth—religious, moral, or natural—there it has elevated the nation practising it, and itself with the nation. . . . Now therefore the sum of all is, that you who wish to encourage Art in England have to do two things with it; you must delight in it, in the first place, and you must get it to serve some serious work, in the second place. I don't mean by serious necessarily moral; all that I mean by serious is in some way or other useful, not merely selfish, careless, or indolent. I had indeed intended, before closing my address, to have traced a few of the directions in which, as it seems to me, Art may be seriously and practically serviceable to us in the career of civilization. . . . I had hoped to show you how many of the best impulses of the heart were lost in frivolity or sensuality for want of purer beauty to contemplate, and of noble thoughts to associate with the fervour of hallowed human passions. . . . But all this I dare not do yet. I felt, as I thought over these things, that the time was not yet come for their declaration. The time will come for it, and I believe soon; but as yet the man would only lay himself open to the charge of vanity, of imagination, and of fondness of hope who should venture to trace in words the course of the higher blessings which the Arts may yet have in store for mankind."

SONG OF THE "THREE WELLS."

Swiss Air.

WRITTEN FOR THE COTTAGE ART CLASSES.

WHEN stars shine bright,
 And Cynthia's light
 Falls gently over hill and plain ;
 When hushed to rest
 Each quiet nest,
 And shadows deepen in the lane,
 Then comes the hour, the mystic hour,
 When Arts and Crafts assume their power,
 In Coffinswell and Kingskerswell !
 And so in Abbotskerswell too !
 For here we merry craftsmen dwell,
 And wondrous is the work we do !

This county blest,
 That in the West,
 Lies softly 'twixt the balmy seas ;
 In days of old,
 As we are told,
 Was famed throughout the world, for these
 Our Arts and Crafts, which here we ply
 When winter nights go swiftly by.
 There's Coffinswell ! and Kingskerswell !
 And so there's Abbotskerswell too !
 And here we merry craftsmen dwell,
 And wondrous is the work we do !

Should storms assail,
 Or floods prevail,
 We speed across the rugged ground ;
 For in our lore
 'Tis reason more,
 That at our trysting-place we're found ;
 Thus helping on, with heart and hand,
 The glory of our native land.
 Here's Coffinswell and Kingskerswell !
 And here's for Abbotskerswell too !
 'Tis where we merry craftsmen dwell,
 And wondrous is the work we do !

E. P.

NOTES ON THE NEIGHBOURHOOD OF WHITE TOR, WEST DARTMOOR.

BY ARTHUR B. PROWSE, M.D. LOND., F.R.C.S. ENG.

(Read at Tavistock, July, 1889.)

ON the New Ordnance Survey Map of Dartmoor (scale, six inches to one mile) are marked many barrows, kistvaens, hut circles, and other records of long bygone generations, which had not previously been mapped or otherwise described. The area of the Moor is, however, so large that it would be strange if the surveyors had not missed many specimens of human handiwork, and of such interesting productions of Nature's "wear and tear" as logan stones and rock basins. In regard to these last, I would remark that, as a result of the examination of a great number of specimens, as well as a due consideration of evidence brought forward in support of very diverse opinions, I cannot agree with those writers who insist that man has had nothing whatever to do with the fashioning of any of these curious hollows. What was perhaps in most cases commenced by a natural disintegration, was in many instances, I am convinced, modified by human art. But as centuries have since rolled by, Nature's power has again become evident in the rounding off of man's more sharply-cut work.

During a short holiday last summer, spent in the neighbourhood of Marytavy, I made a few observations, which led to the writing of the following brief notes.

White Tor is about two and a half miles east of Marytavy. The highest point—a rocky pile on the northern side of its summit—rises to 1532 feet above sea-level. The summit is encircled by a double row of roughly-piled stones, and must have been a strong and important aboriginal fortification.

One-fifth of a mile east by north of the tor, and about eighty yards south of a straight line between it and the highest part of Cock's Hill, is a kistvaen, of which I can find no published record. Its long diameter is north-west by north, and south-east by south. The northern, eastern, and southern stone slabs are erect, and in close apposition; the western has been removed. The massive cover-stone measures 4 ft. 9 in. along its eastern side, and 3 ft. 9 in. along its western side; its width is 3 ft. 6 in. The upper surface is pyramidal in shape, so that the stone at its thickest part measures 1 ft. 10 in. It has been displaced laterally, and now rests against the eastern erect slab in an inclined position, with its lower edge imbedded a few inches in the turf. The cavity of the kistvaen is 2 ft. wide, and 1 ft. 10 in. deep. At the level of the ground the length is 3 ft. 9 in.; but as the end stones lean inwards, the length at the top is 6 in. less. The ground around is nearly level for a long distance, rising slowly in the direction of White Tor, and is in many places covered thickly with those curious rounded mounds, like big ant-hills, so common on the soil covering the greenstone in the neighbourhood of the granite, and which, as far as my experience goes, are not seen where granite is the substratum. For some distance around there are hardly any loose masses of rock to be seen; and it was this fact which first drew my attention, while afar off, to the collection of stones forming the kistvaen, and led me to examine it more closely. There is not much evidence of its having been imbedded in an earthen tumulus; but on the northern side is a small heap of earth and small stones, probably artificial. The turf which forms its floor is on a rather lower level than the surrounding grassy surface, and anything of a sepulchral nature the cavity may have held must have been long since removed.

One mile and a quarter south of White Tor is Rolls (or Roos) Tor, 1510 feet high. The uppermost stone of the south-eastern pile on its summit logs very readily to the pressure of the hand or foot, the extent of vertical movement at the margin being one inch. The stone is irregularly oval in shape, 12 ft. long by 9 ft. wide, and in the centre is about 3 ft. thick; its circumference is 30 ft. On the surface of the supporting rock are two rock-basins. This logan is not indicated upon the New Ordnance Map, nor have I met with any reference to it elsewhere.

Nearly a mile north-north-east of the top of White Tor is the farm of Wapsworth. Passing from it in a south-east

direction for about one-third of a mile up the gradually-rising ground, which is thickly strewn with masses of stone, is a broad trackway, varying in width from 9 ft. to 13 ft., carefully cleared of obstructive rocks, and in many places roughly paved with flattish stones. It certainly is not an ordinary cart-track of modern origin, and appears to me to partake of the characters of the *ancient* trackways which are met with in other parts of the Moor. It ceases to be traceable at a point about half a mile due north of the summit of the tor, but, from its direction there, appears to have passed up the hillside in an east-south-east direction, obliquely across several large "new takes," which extend up the western slope of Cock's Hill. Near the upper boundary of these "new takes," about two-thirds of a mile east by north of White Tor, we meet with a cart-track, which on the Ordnance Map seems to be a direct continuation of the "Lich Way" which comes westward from the neighbourhood of Postbridge, past Devil's Tor and Conies Down, crossing the upper waters of the West Dart, Cowsic, and Walkham. It seems to me probable that this Wapsworthly trackway was the direct continuation of the track marked as the "Lich Way," which almost certainly followed the course of one of the ancient trackways leading to the inner recesses of the Moor. The entrenchment on the summit of White Tor would then be an important stronghold, by reason of its commanding this entrance to the Moor from the Lydford side, and affording protection to the Keltic inhabitants in their moorland homes. The remains of one of their settlements, consisting of about twenty-five hut circles, may be seen on the north bank of the Walkham, one mile east-south-east of the tor. Two miles eastwards was another smaller village below Conies Down Tor, on the banks of the Cowsic, and quite close to the trackway, or Lich-path. The fortified hill must have borne a Keltic name in those days, the present title (White Tor) being evidently of much more recent date.

Now I believe we have this Keltic name preserved to us in the Perambulation of 1240, where the forest boundary is described as passing from "Mystor" (or "Mistmore") to "*Mewyburghe*." This word is apparently derived from the Keltic "*mwy bwr*," meaning the *greater entrenchment* or camp—greater probably by comparison with some less important enclosure not far distant. In the Perambulation of 1609 we find the word spelt "*Meuborough*," but strangely enough the perambulators conclude that it refers to a site

they call "Dedlakehead;" i.e. the ground around the springs of some little feeder of the Walkham river. This guess of theirs does not commend itself to me.

Doubtless even in those days the venville tenants were as jealous of their rights, or what they considered to be their rights, as they have shown themselves in more recent times; doubtless also the Duchy authorities were not so strict as they have since become. So that when the Perambulation was ordered by King James, and it was found that many of the ancient bounds could not be certainly recognised, because the older names had become locally obsolete, the jurors (or perambulators), alluding to this fact, say "that the bounds of the fforest of Dartmoore, as they, the said jurors, do fynde, partlie by the coppies of auncient recordes, p^{tho} *uppon the evidence of other p'sons*, and partlie uppon their owne knowledge, but *especiallie as the boundes have beene and are used and accustomed*, to be these as follows," &c., and they then proceed to trace them as well as they can. I have no doubt whatever that interested persons were only too ready in any case of doubt to assign, as bounds of the forest, localities further from their own holdings than the original bounds were.

The same tendency to contraction of the forest boundary seems to have been at work in more recent years. In proof of this, it is only necessary to compare the bounds, as set forth in the 1609 document, with the limits now marked upon the New Ordnance Maps.

The next bound, north of Mewyburghe, in the earlier records is termed "*Lullingesfote*,"¹ or "Hullingssete," or "Lullingesete;" but the 1609 jurors, oblivious of the fact that "*fote*" (i.e. foot) could hardly refer to a relatively high situation, concluded that it was the hill known to them as Luntesorowe, now called Lints Tor. The termination "*fote*" occurs several times in the Perambulation, describing the place at which a brook ends in a larger stream. Thus the next forest bound, in a northerly direction, is called "*Rakernesbrokysfote*;" i.e. the foot or ending of the brook of the long ridge, for I believe the first half of the word is derived from the Keltic "*rhych*" (or "rhac")=ridge, and "*hir*"=long. The long ridge being, of course, Amicombe Hill, by the side of which the Rattlebrook, as it is now called, courses for about three miles. This huge ridge is in relation on all sides with a number of deep coombes or valleys; and to this fact I am inclined to assign the

¹ See Rowe, p. 266.

origin of its name—Amicombe = *Aml cwm*; i.e. the hill of *many valleys*.

From a careful consideration of the 1240 Perambulation, and of the locality, I conclude that the forest boundary passed from Great Mistor for one and half miles north-west to White Tor; then in a north-north-east direction past Baggator at the foot of South Lints Tor, and so on over the east side of Stanon Hill to where the Rattlebrook joins the Tavy. If this were so, a considerably greater area must have been included in the west quarter of the royal forest at the middle of the thirteenth century than is commonly believed.

HISTORY OF THE CHURCH AT LYDFORD,

WITH SOME ACCOUNT OF ITS RECTORS.

BY MRS. G. H. RADFORD.

(Read at Tavistock, July, 1889.)

THE history of the Church at Lydford begins *before* the introduction of Christianity into England by Saint Augustine, A.D. 597. For a hundred years at least before his coming, missionaries from Ireland, then a Christian and civilized country, had been crossing the sea to Wales, West Wales (or Cornwall and Devon), and to the north of England and Scotland, the districts most easily accessible from their own island. As to the results of their labours here in the West, we cannot do better than quote the present Archbishop of Canterbury :

“If St. Augustine had come there, in Cornwall, he would not have had to have made his way among crowds of heathen people who wondered what he was come for ; but there in Cornwall he would have found people to meet him with the full knowledge of the Gospel, worshipping day after day, as well as from Sunday to Sunday, in that little church [St. Piran’s]. St. Augustine would have found himself among people who knew and loved the Gospel which he taught. They knew perhaps that in the fifth century there came over from Ireland, which was already Christian, missionary after missionary, who took up his abode on those coasts of theirs.”¹

One of the most celebrated of these missionaries was St. Petroc, to whom Lydford Church is dedicated. This saint is said to have been a native of Wales, educated in Ireland under St. Patrick, and to have landed in Cornwall at a

¹ Report of the Bishop of Truro’s sermon at the re-opening of the church of Perranzabuloe, August, 1878.

place called after him, Petrocstowe (now Padstow), in 518. After founding the Church in the West, and becoming the first bishop, he died at Lanpetroc (now Bodmin) on the 4th June, 564. There are many legends connected with St. Petroc, but his life was not written until more than seven hundred years after his death, and it is therefore described as "vita suspecta" in the great work of the Bollandist Fathers on the *Lives of the Saints*.¹ He was honoured in the West; a monastery and a "great church" (Leland), which King Athelstan afterwards favoured with many benefactions, being erected soon after his death at Lanpetroc; and ten churches in Devon and Cornwall were dedicated to him. In the calendars of some churches and monasteries in Brittany the feast of St. Petroc is ordered to be kept as of the first class. There is in existence at the British Museum a copy of the Gospels written in the ninth century, in which are forty-six entries of manumissions of serfs made before his altar at Bodmin, dating from 941 to 1043; and the ivory casket that formerly held relics of the saint is still to be seen at Bodmin.

The fact that Lydford Church is described as the church of St. Petroc in 1237, nearly thirty years before its dedication by Bishop Bronescombe, leads us to infer that the church had been founded in British times possibly by the followers or disciples of St. Petroc himself; for it is certain that neither the Saxons nor the Normans had sufficient reverence for British saints to dedicate churches in their honour. When Athelstan, in 962, fixed the Tamar as the boundary of his kingdom, and the Saxons reached Lydford, they found the church (then probably built of wood) existing, and dedicated to St. Petroc. It suffered from the fury of the Danes in 997, and no doubt the treasures of the church contributed to the "incalculable plunder"² that the Northmen carried back to their ships. The town of Lydford rose after this to be one of the four chief towns in Devon,³ and the church grew with it. The record of this period of its history must be more or less conjectural, as the contemporary authorities are so few.

The *Anglo-Saxon Chronicle* and *Domesday Book* do not mention the Church of Lydford when referring to the town, and the only records after *Domesday Book* are the *Pipe*, *Patent*, and *Exchequer Rolls*, and the *Registers* of the Bishops of Exeter, all of which are of the greatest value. But the Bishops' Registers, which form an almost continuous history of ecclesiastical affairs in Devon and Cornwall, do not begin until 1257, and, probably from the fact that from Saxon

¹ *Anglo-Saxon Chronicle*.

² *Domesday Book*.

times the borough and manor of Lydford have been the property of the Crown, the entries in the early Rolls relative to them are very meagre or altogether wanting.

It has been proved by research that parishes are founded on manors; in fact, the parish may be said to be the manor in its ecclesiastical aspect. The parish of Lydford includes the borough of Lydford and the forest or chase of Dartmoor, and is therefore of great size, certainly the largest in Devonshire, as it is stated to contain 56,333 acres.⁴ The town of Lydford belonged, as we know from *Domesday Book*, to Edward the Confessor, and to William the Conqueror after him. And the forest of Dartmoor was also the property of the Crown. It is so described in the reign of Richard I., when John, then Earl of Mortain, issued his Charter, disafforesting the whole of Devonshire except Dartmoor and Exmoor.

It has already been stated that the earliest known mention of Lydford Church is in 1237. It occurs in the Patent Roll for the twenty-first year of King Henry III.; the following is a translation, the original being given at the end of this paper:

"12th July, 1237. For the Church of 'Saint Petroc' (Sancti Patrochi). The King gave and granted to God and the Church of St. Petroc of Lydford and to the Chaplain ministering in the same Church for his support, and to whosoever shall be chaplain of the same for the time being; the tithe of the herbage of the Moor of Dartmore. In witness, &c. Given at Woodstock on the 12th day of July—and Herbert the son of Matthew is ordered to cause the said parson of the said church to have the same tithes. In witness, &c."

Herbert Fitz Matthew held the manor of Lydford at this time "ad voluntatem Domini Regis."⁵

Soon afterwards, though at what exact date we have not been able to discover, £3 seems to have been fixed as the amount payable by the Earldom of Cornwall on account of this grant. That sum is mentioned as paid to the parson of Lydford in the "ministers'" account of Edmund Earl of Cornwall, 1296-97,⁶ and it continued to be paid to successive rectors down to the time of Queen Anne.

In the same year, 1237, begins the list of rectors of Lydford, which is continuous from that date down to the present time. The first rector is called simply Michael the

⁴ Census of 1871.

⁵ Placita Corone, 22 Henry III. m. 39 d.

⁶ Document quoted in the Appendix to Rowe's *Perambulation of Dartmoor*.

priest. He was presented to the living by William Briwerre, to whom Lydford Castle had been granted "during pleasure" by King John in 1216.⁷ William Briwerre owned much land in Devonshire, and founded the Abbey of Torre and the church of Dunkeswell, where he was buried. He enjoyed the favour of four kings—Henry II., Richard I., John, and Henry III.⁸ At this time the rectory was worth forty shillings a year.

The next rector is Bartholomew de Thetteburn, who was appointed by Richard Earl of Cornwall,⁹ afterwards King of the Romans. But it is expressly stated that the church of Lydford is in the gift of the king. The church was then worth five marks. That Richard, Earl of Cornwall, presented this rector proves that Lydford and Dartmoor were at this time, as they have been ever since, part of the Earldom, or, as it was afterwards created, Duchy of Cornwall.

The thirteenth century was a period of extraordinary religious or ecclesiastical activity; and the same enthusiasm which caused the building or rebuilding of cathedrals in England, and indeed throughout Europe, extended to the remotest parishes of Devonshire and Cornwall.

"We find," says Prebendary Hingeston-Randolph, "that between September, 1259, and the end of 1268 the bishop (Walter Brounscombe) was called upon to dedicate eighty-eight rebuilt or enlarged churches. Of these dedications forty occurred in a single year (1259). Many of the old sanctuaries erected in Saxon or in Norman days had probably become decayed or perhaps even ruinous, and demanded the restorer's hand. In the course of 1261 the bishop again visited every part of the two counties, dedicating sixteen churches and almost rivalling the wonderful progress of 1259."¹

Lydford was one of these sixteen churches, several neighbouring churches being also dedicated by the bishop on the same journey—Okehampton, July 31st; Lew Trenchard, August 2nd; and Lydford, August 3rd, 1261.² That the church at Lydford was only rebuilt, and that there had previously been a church there dedicated to St. Petroc, is proved by the grant, already quoted, of the tithe of the herbage of Dartmoor in 1237 to the church of St. Petroc

⁷ Roll endorsed *Placita de Juratis et Assisis Corone, &c.*, 22 Henry III. m. 39.

⁸ WORTH'S *History of Devonshire*.

⁹ *Placita de Juratis et Assisis Corone*. Devon, 1248-49.

¹ Preface to Bishop Brounscombe's Register.

² Bishop Brounscombe's Register, fol. 20b.

at Lydford. And in the *Ordinacio de Lideford*, given by Bishop Bronescombe at Crediton on August 20th, 1260, the parishioners living in the outlying hamlets of "Babbeneye and Pushylle" are ordered to offer certain tithes in the church of Lydford on the day of St. Petroc (June 4th).³

This "*Ordinacio*" is very interesting, and has been adduced in evidence more than once in disputes as to the payment of tithes in this large parish. I have therefore given an abbreviated translation, and a copy of the document itself will be found in the appendix.

"To all, etc., Walter, Bishop, etc.—Understanding by the assertion of trustworthy persons that certain parishioners of the Church at Lideforde, inhabiting the hamlets which are called Babbeneye and Pushill, are so far distant from their said mother-church, that on account of the too long distance they are unable in any way to attend it as often as is fitting for them, We have issued our Mandate to our beloved son, the official of the Arch-deacon of Totnes, to make full enquiry, etc. . . . And since we have found, by a certificate of the said official, that these inhabitants are not numerous enough for the construction of an Oratory, and that the Parish Church of Wydecombe is near to these places, and that the said places are distant from the mother-church of Lydford by eight miles in fair weather, and in tempestuous weather by fifteen, we caused the Rectors⁴ of these churches to be called into our presence. The said Rectors having appeared before us, We explained to them the aforesaid danger, and having obtained the consent of the Patrons,⁵ they promised to obey in good faith our will in this matter, and to observe our said ordinance for ever. With the advice of wise men present with us we thus ordained:—Namely, that the inhabitants of the said and of adjoining places remaining for ever, as in truth they are, parishioners of the Church of Lydford, may hear Divine Service in the Church of Wydecombe, and may there receive all the sacraments of the Church in life and death. They were to pay for the roof and fabric of the church of Wydecombe, and for the enclosure of the cemetery, and for the supply of lights, and for providing the blessed bread, together with the parishioners of the said church. Let them observe the usages of the said church in the visitation of the sick (etc.), let them make their offerings solemnly also in the same place three times a year, and nevertheless let them discharge fully the tithe of lambs to the same

³ Bronescombe's Register, 16b.

⁴ Preb. Hingeston-Randolph's *Index* (Bishop Bronescombe, p. 204.)

⁵ Bartholomew de Thethburn, rector of Lydford; and Thomas de Bocland, rector of Widecombe.

⁶ Dean and Chapter of Exeter, patrons of Wydecombe, and Richard, Earl of Cornwall, patron of Lydford.

church. But in sign of subjection and in recognition of the right of the parish let every inhabitant of the said places, being a holder of land, solemnly offer once in the year, that is to say on the Day of St. Petroc (4th June), in the church of Lydford, and let them discharge all tithes and oblations, major and minor, those only excepted which are enumerated above, to their mother-church of Lydford, without any deduction or dispute."

The next rector is John, *dictus* Forbur, who was inducted September 24th, 1272, on the presentation of Edmund Earl of Cornwall,⁷ who had succeeded his father Richard King of the Romans.

This is the first rector in the Bishops' Registers. No one had been instituted since 1257, when the Registers commence; so that, probably, Bartholomew de Thetteburn was in possession, and was the rector of Lydford referred to in the ordinance just quoted as having been consulted in 1260.

On November 27th, 1272,⁸ the bishop committed the custody of Lydford Church to Adam de Bremelle ("Bremley"), chaplain. His institution is not recorded, but he occurs as rector on July 19th and September 1st, 1283; so, of course, he was instituted. (Prebendary Hingeston-Randolph.)

During the time Adam de Bremelle was rector the living is stated by the jury assembled at Lydford in 1280 to be worth 25 marks a year.⁹ This is a great rise in value, as in 1248-9 it was only worth five marks a year. Richard King of the Romans had the reputation of being a hard man—one who exacted the uttermost farthing. At this time also the tin mines, or streamings, were worked on Dartmoor, and the increase in value may be due to tithes from the miners.

The living having been sequestrated on account of Adam de Bremelle's non-residence,¹ the sequestration was taken off July 19th, 1283; but Adam was to reside in future continuously. On January 17th, 1284-5, the bishop committed the custody of the church to Hugh de Shuptone, because Adam de Bremelle had become a monk.

About this time a taxation of all the benefices in England was made, the Pope Nicholas IV. having granted the tenths for six years to Edward I. towards defraying the expense of an expedition to the Holy Land.² This taxation was begun in 1288, and finished in 1291. The rectory of Lydford was

⁷ Bronescombe's Reg. fol. 50.

⁸ *Ibid.* fol. 51.

⁹ Placita Corone, 9 Edward I. m. 18.

¹ Bronescombe's Reg. fol. 121b.

² Vol. 1 of the *Exeter Episcopal Registers*.—Preb. H.-RANDOLPH.

valued at 30s.; therefore, as it was a benefice not exceeding ten marks in value, there were no tenths due from it.

There is no other mention of Lydford in Bishop Quivil's Register, and none (as far as I can see) in Stapledon. No doubt there was an institution in Quivil's last years, or by Bytton, for both of which our registers fail us. The next rector was William de Welyngoure, clerk, admitted on June 22nd, 1328, at Clyst, in the person of William de Neuwtone, his proctor, on the presentation of the king (Edward III.), made to the bishop at Donzate (Donyatt, in Somerset), on June 8th.

William de Welyngoure, like several of his successors, does not seem to have liked Lydford, for he resigned on November 18th of the same year. And Reginald de Aston, accolite, was admitted at Chuddeleigh on February 20th, 1328-9, also on the presentation of King Edward (III.). He resigned after a short stay of three years, and Augustine de Botrecomb, clerk, is admitted at Clist May 15th, 1332, on the presentation of Sir Hugh de Audeleghe. This Hugh de Audeleghe had married Margaret, niece of Edward II., and widow of Piers Gaveston. In 1307 the Earldom of Cornwall, the Castle of Lydford, the town of Exeter, and the Chase of Dartmoor had been given to Piers Gaveston,³ Edmund Earl of Cornwall having died in 1300, and his estates having reverted to the Crown.⁴ After Gaveston was beheaded, in 1311, his widow retained possession of Dartmoor and Lydford, and brought them to her second husband. For in 1318 there was an enquiry held by the justices at Lydford as to the intrusion by force of Thomas, Abbot of Bokland, six co-monks, and thirty-three others, into the free Chase of Dartmoor, belonging to the said Hugh d'Audele.⁵

Hugh de Audley was imprisoned by the king⁶ in 1319, or early in 1320, and his estates forfeited. These were ordered by Edward III. to be restored in 1327;⁷ but he probably did not get possession very quickly, as the king presented two rectors in 1328.

When the Duchy of Cornwall was created, March 17th, 1337, it is stated in the original grant to the Black Prince that the Castle and advowson of Lydford and the free Chase of Dartmoor were now in the hands of our well-beloved Margaret, Countess of Gloucester, wife of Hugh de Audele,

³ Cal. Rot. Chart. 1 Edward II. pars. 1.

⁴ Inq. Post-mortem, 28 Edward I.

⁵ Pat. Roll, 11 Edward II. p. 1, m. 30 d.

⁶ Edward II.

⁷ Rot. Claus. 1 Edward III. p. 1.

and that on her death they were to go to the Duchy. This took place in 1343, and consequently the next rector of Lydford was presented by the Black Prince, April 11th, 1349.⁸

He was John de Preston, clerk, instituted at Chuddeleighe; but he did not stay long at Lydford, as on April 6th, 1350, Lawrence de Wyke, clerk, was presented by Edward, Prince of Wales, Duke of Cornwall, and Earl of Chester.

The next rector was Robert Tappot, but no record of his admission can be found at Exeter or at Lambeth, although diligent search of both registers has been made.

William Wencelawe, priest, was instituted at London, January 23rd, 1385-6, on the presentation of King Richard II., in whom the Duchy of Cornwall was vested in default of an heir. This William does not seem to have appreciated Lydford, for after holding the rectory for just one year, we find him⁹ exchanging with Thomas Baret, rector of Willesford, in the diocese of Lincoln, who was admitted in London, in the person of Thomas Westone, clerk of the diocese of Hereford, his proctor, on the presentation of King Richard II.

On December 28th, 1388, he exchanged with Philip de Newton (Lambeth Register) or Nywatone (Exeter Register) at Croydon. This Nywatone was rector of the parish church of St. Mildred's at Canterbury.

Philip exchanged again, April 20th, 1392, with Henry Legge, rector of Clist Fomison (Sowton), who was admitted on the presentation of Sir Philip Courtenay, knight, "patron for that turn." How Sir Philip Courtenay acquired the right to present I have been unable so far to discover. The custody of Dertmore forest, and the advowson were granted to Sir Richard Abberbury for life in 1377,¹ but he never presented anyone to the rectory. But the latter part of Richard the Second's reign was a troubled period in English history, and records may be missing.

This Henry Legge is the first rector of whom we have any particular record beyond the facts of institution, and death, or exchange. A dispute having arisen in 1415 between John Westone, rector of Bridestowe, and Robert Franke, to whom he had offered "a competent salary" to serve the parish church, the said Robert refused to do so. The Bishop, therefore, on October 31st, issued a commission to the Dean of Tavistock, Henry, rector of Lydford, William Hawke, chaplain of Sourton, and John Bydelake, literate, to warn the said Robert (Franke) three several times that he proceed

⁸ Cal. Inq. Post-mortem, 16 Edward III.

⁹ February 7th, 1386-7.

¹ Pat. 10 Richard II. p. 11, m. 13.

within ten days to the work at Bridestowe, on pain of suspension. If he refused, he was to appear in person before the Bishop at Clyst.²

Henry Legge exchanged, July 28th, 1424, with Richard Milward, "Chaplain of the Chantry of the Blessed Mary of Bryhtlegh in the same diocese," presumably the chapel at Brightley, in the parish of Okehampton, founded by Richard de Redvers (Earl of Devon), who was admitted, on the presentation of King Henry VI., at Chuddelegh. When the next rector was instituted I cannot tell; he died before November 9th, 1487, as we learn from Bishop Fox's Register, where he is called Richard Wekys, and from the Patent Roll³ of 3 Henry VII., where his name is spelt Wykes. He was succeeded by Richard Shelston, or Shilston, who was admitted by the Bishop's Vicar-General in the person of Sir John Fulford, his proctor, on the presentation of King Henry VII.

It is very unfortunate that we possess no records of Lydford during this period, as it is almost certain that the beautiful church tower and south aisle were built in the interval between the institution of Richard Milward in 1424, and that of Richard Shelston in 1487. It is evident from the structure of the present church that it originally consisted only of a nave and a chancel. Of the older church only the font, and possibly the corner of the north wall, near the tower, remain. These are, as Mr. Loftus Brock pointed out when the British Archæological Association visited Lydford, "of very great antiquity, in fact he would not venture to assign a date to them."

The church was probably re-built just before it was dedicated by Bishop Bronescombe in 1261, on the same spot, and most likely on the same plan as the earlier church, which itself had succeeded the first church of St. Petroc's disciples.

The windows were altered, or new ones inserted, about the middle of the fourteenth century. And in the middle of the fifteenth century, the date at which we have now arrived in our list of rectors, the church was enlarged by an aisle on the north side of the old church, with an altar to the Blessed Virgin at the east end, the piscina belonging to this altar still remaining. At the same date the rood-staircase, which is unusual in design, in that it is open all the way up to the point at which the priest emerged, was pierced by a large and somewhat rudely-shaped hagioscope. This, of course, was to enable the worshippers in the new aisle to

² Preb. Hingeston-Randolph's Index to Bishop Stafford's Register, p. 106.

³ P. 1, m. 18.

see the elevation of the Host, which but for this opening would have been invisible to them.

The tower, which is a very fine example of the architecture of the period, is of a type not very common in Devonshire. It is solidly built entirely of granite, and was carefully constructed so as not to interfere with the existing church, "being built some two feet away from where the old western wall formerly existed."⁴

To return to the rectors, Richard Shelston held the rectory for a very long time, or it is possible that there may have been some one between him and George Carew, although it is not likely. But when Master Carew was instituted, 23rd September, 1533, the name of the last rector who had died is left blank both in the Bishop's Register and in the Patent Roll, 25th Henry VIII.⁵ He was instituted at Greenwich by Mr. Thomas Brerwode, the Bishop's Vicar-General, on the presentation of King Henry VIII. This is probably the same George Carew who, in 1559, became Archdeacon of Exeter.

During the time he was rector of Lydford two Inquisitions of church property were made—the first by order of Henry VIII., and the second by Edward VI. The first is given in the *Valor Ecclesiasticus*; Prebendary Hingeston-Randolph has been kind enough to translate and extend it for me.

"Deanery of Exeter, County of Devon

Deanery of Tavistock

Lydford in the Deanery and Diocese aforesaid

George Carewe, Rector there.

The Rectory there is worth per annum with the land of the Sanctuary (the Glebe) and all other Tithes and oblations to the aforesaid Rectory pertaining—and so leased, by Indenture, to John Drewe and Henry Hogge, for a term of five years				xvj lib (£16)
Out of this, paid to the Archdeacon aforesaid, and his successors, yearly, for Procurations				iijs (3/-)
Also for Synodals				ijs vd (2/5)
Also for the Visitation, to the aforesaid Bishop and his Successors, yearly				xijs (1/-)
And there remains clear				xv lib xijs vijd
Out of which, for the Tenth				xxxs iiijd ob
Gross value		£16	0	0
Outgoings		0	6	5
Net value		£15	13	7
Of which one 10th part is		1	11	4½"

⁴ Mr. Loftus Brock, F.S.A.

⁵ P. 1, m. 23.

The second Inquisition was made by Sir Peter Carew and others in 1553, 7th Edward VI.

The returns, although giving full details as to the Exeter churches of the vestments, plate, books, bells, &c., they possessed, are so meagre about the other churches in Devon as to lead to the belief that they are imperfect, and that some of the returns have been lost. The possessions of Lydford Church are thus described:

“Parochia iij bells in the belfrye there, and one chalyce, committed to the custody of John Horswill, Pascoe Lydford Borrowe and others the parishioners there by indenter.”

These two men were the richest in Lydford—John Horswill in lands, and Pascoe Borrowe in goods.⁶

In the same year George Carew resigned, and was succeeded 22nd November, 1553, by Richard Michell, clerk, on the presentation of Queen Mary. This gentleman must have had an elastic mind, as the accession of Queen Elizabeth and the return of the Protestant faith made no difference to him. He retained his rectory until his death, in 1570.

The 29th day of November in this year Anthony Randal was admitted on the presentation of Elizabeth, Queen of England. This rector certainly distinguished himself, though not in a desirable way, for he became a member of the “Family of Love.” This sect, which had been founded in Holland by Henrik Niklaes, or, as he was generally called, H. N., spread to England, and had at this time many adherents, mostly among the poor and unlearned.

It is difficult to say exactly what they did believe, but their opponents make terrible accusations against them, especially as to their morality.

H. N. declared that he was “the heir of all things,” therefore whatever he did or ordered to be done must be right. Another of his statements was, that “Martin Luther and the Byschop of Rome be vaine prophets, but of both Luther is the worst.”

His works were translated into English and taught “by one Christopher Vittel, a joyner, dwelling some time in Southwark, who hath by his trudging about the country infected sundrie simple men with this poysoned doctrine and snared their minds, so corrupting them that it is harde to pluck out of their heades those vaine toyes of H. N., which Vittel hath so deeply impressed.”⁷

⁶ Lay Subsidies of 1522-3, 1543, and 1546.

⁷ *The Displaying of a Horrible Sect of Grosse and Wicked Hereticks: The Family of Love.* By J. R. (John Rogers). London, 1579.

Anthony Randal must have been one of those so "infected," and he adhered to his opinions with great tenacity, as may be judged from the following letter from Bishop Woolton to the Lord Treasurer Burghley, which is stated by Strype to be in his own possession :

"Excestre, the 6th of June, 1581.

"My duty to your Lordship remembered, For that I am advertised, that the lords of the Council had, and yet have earnest complaint made unto them against me, for my proceedings against one Anthony Randall, late parson of Lydford in my diocese ; whom I justly deprived for his dampnable opinions and heresies. And after his appeal from me to the Arches and from thence to her Majesty's delegates, I had my proceedings approved and ratified ; yet for that your lordship may haply not be acquainted therewith, and also for your better resolution of my doings, and the saving of my credit with you, I thought it appertaining to my duty to send your lordship herewith a copy of his strange opinions truly exemplified, which opinions he maintaineth obstinately at this present ; and within these few days subscribed unto them again in the presence of divers public notaries, as it may appear unto your lordship by this enclosed, the original remaining in my registry, as a perpetual testimony against Randal.

"And for that Randal hath many complices, and that hurtful sect the Family of Love beginneth to creep in this country, of the which company twenty are brought to open recantation in this Cathedral Church ; and my proceedings against the rest would be much weakened if the untrue reports of Randal or his friends should be heard, in consideration of the premisses, I do beseech your lordship that my sentence given against the said Randal and ratified as aforesaid may have good countenance and liking at your hands.

"Which I request not so much for mine own credit as for the peace and quietness of God's Church ; which by means of Randal and his adherents is very much disturbed.

"Thus, fearing to be tedious to your lordship, I commend you to the protection of the Almighty. Excestre, the 6th June, 1581.

"Your lordship's to command

"John Exon."

It is to be regretted that we have no record of this controversy from Randal's point of view, but even the "perpetual testimony," as the bishop calls it, signed by the sequestrated rector, no longer exists. At least, most careful search has been made in the Register, and some old deeds of this date in the bishop's Registry have been examined, but with no success.

Anthony Randal had been deprived of his benefice some

time before the date of this letter, as his successor, Peter Dunkan,⁸ or Duncan, M.A., was instituted April 16th, 1580, on the presentation of Queen Elizabeth. He did not stay long at Lydford. Perhaps he found the people difficult to manage, for Randal must certainly have had followers in his parish. Whatever was the cause, there were several changes in the next few years — Francis Myddleton, clerk, was instituted September 11th, 1583: he resigned, and John Bickle, clerk, succeeded on September 9th, 1584: he died, and William Hele, M.A., succeeded June 25th, 1589, to resign November 21st, 1598, when William Hunt was instituted, also on the presentation of Queen Elizabeth, he being the sixth rector presented by her.

Lydford was not a rich living, and the tithes received by the rector from those who depastured their animals on Dartmoor made up the largest part of his income. William Hunt had little difficulty in collecting these tithes, which was a troublesome matter for some of his successors. But he had other sorrows; for in 1598 (the year of his institution) he borrowed "the summe of £9 of lawful money of England from Angell Maddocke proctor of the Civill Lawe at Exeter." Angell Maddocke is described by his debtor as a "most unconscionable man;" and the epithet seems justifiable, for not only did he make William Hunt promise "in writing obligatory" to pay £18 when he lent him the £9, but when William Hunt did not pay the third or fourth instalment on the very day it became due, Angell Maddocke and Anthony Turpyn began a suit "at Comen Lawe" upon the bond of £18, and "enforced" the unhappy debtor to sign two more bonds of £40 each. He managed to pay £23 (pretty high interest, as he had actually received but £9) when the "unconscionable" Angell began another suit against him for the "whole penalty of the two bondes of £40." Then William Hunt "in his extremitie did lease by Indenture to Angell Maddocke and Anthony Turpyn his rectory of Lydford and all tithes, oblacions, profitts and commodities thereunto belonging (the Glebe and lande with haye and the Tenth of Pigge and geese of the said Rectory only excepted) from a certain Feast day specified in the said Indenter for Four years, full, complete, and ended." The two usurers undertaking to pay William Hunt £15 per annum out of the profits. But the first year they were in possession, although they received tithes amounting to £40, they refused to pay the promised £15. Whereupon William

⁸ RYMER's *Fœdera*.

Hunt took possession of his rectory again, and let the same and the tithes to Thomas Vosper, to whom he became bound in the sum of £200. "But the aforesaid Angell Maddocke and Anthony Turpyn, to satisfy their insatiable and covetous mynds by ungodlie oppression, made him forfeit the said bond of £200." They also summoned several persons, inhabitants of the parish of Lydford, before the Ecclesiastical Judge within the Diocese of Exeter. The unfortunate William Hunt then filed a bill in Chancery,⁹ and his "bill of complaynt," and the answer of Angell Maddocke, which are to be found at the Record Office, are the sources from which this sad story is drawn.

In May, 1613, a rate was made for the "reparacion" of the church by John Walter, Stephin Tuddy, Alexander Wilkey, and Walter Frind, with the consent of Stephin Harragrow, churchwarden. While the rectory had been farmed out in the disgraceful way evidenced by the Chancery suit, the church must have been neglected. No particulars are given as to the "reparacion" required, but nothing much can have been done, as the rate only brought in £1 and a few pence.

"Imprimis William Hunt Clerk . . .	xviiiid.
Itm Thomas Williams the elder . . .	iis vid.
Itm Thomas Williams the younger . . .	iis vid.
Itm John Burrough the elder . . .	iis vid.
Itm John Walter . . .	xxiiid.
Itm Stephin Tuddy . . .	xxd.
Itm Alexander Wilkey . . .	xxd.
Itm Walter Frind . . .	xviid.
Itm Roger Martyn . . .	xiiid.
Itm Thomas Burrough . . .	xiid.
Itm Stephin Harragrow & his mother . . .	xd.
Itm William Pellowe and his sonne . . .	xd.
Itm Johan Newcombe widow . . .	ixd.
Itm Nicholas Downe . . .	viid.
Itm Andrewe Rowle . . .	iiid.
Itm George Beckome . . .	iiid.
Itm Margery Tremlet widow . . .	iid.
Itm the Mill and the Millham . . .	iiid.
Itm John Taverner . . .	iiid.

"By me William Hunt,
"Clerk."

Many of the names are still to be found at Lydford, but others have disappeared. The Harragrows, or Harroddros, though settled at Lydford before the time of Henry VIII.,

⁹ November 6th, 1606.

are not to be found now; and how such a thoroughly Scotch name as Alexander Wilkey came there is not easy to explain. Andrew Rowle recalls the Gubbins, who dwelt, according to Fuller, in a "Scythia within England," probably situated in the valley of the Lyd, below the point where the stream that forms Lydford Cascade flows into the river. These lawless outcasts and their captain are thus referred to by William Browne in his poem on Lydford:

"By whom, if any pass that way,
He dares not the least time to stay,
For presently they howl;
Upon which signal they do muster
Their naked forces in a cluster,
Led forth by Roger Rowle."

The date of this poem is unfortunately uncertain; it is given in Westcote as 1644, but it is almost certain that William Browne died before this. In the *Biographical Dictionary*¹ it is stated that "after 1640 we hear no more of Browne. In the register of Tavistock, under date March 27th, 1643, is an entry (which I have verified), 'William Browne was buried;' but as the name is so common, we cannot be sure that this William Browne was the poet."

To return to our rector. There is another document in the Bishop's Register with his signature. It is headed,

"A true certificate of the houses and glebe lands that belong to the rectory of the parish of Lydford.

"Imprimis the hall and a parler (*parlour*), with a chamber over the parler, the entry with a chamber over the entry, on (*one*) chamber above the entry with a chamber over, on (*one*) buttery, a barne, on (*one*) cowe house and a stable, with a little kytchin at the end of yt."

The house was evidently not large, and seems to have been arranged in rather an Irish fashion.

Then follow the glebe lands, and the document goes on:

"There are cottygers and all poore people xxvi house holders.

"Implements—

"I found noon in the house what I shall leave I know not.

"By me Willyam Hunt Clerk
"parson of Lidford."

This is the last we hear of William Hunt. He died in 1624, having been rector of Lydford for 26 years.

William Barber, clerk, was admitted in London on the

¹ Vol. vii. p. 74.

presentation of Charles, Prince of Wales and Duke of Cornwall (afterwards Charles I.), November 30th, 1624. He seems to have experienced great difficulty in obtaining tithes from some of his parishioners, and commenced several suits in the Ecclesiastical Courts against William French, Robert French, George Willcocks, Anthony Langworthy, Andrew Hannaford, Thomas French, and Peter Manne and others, tenants and inhabitants of Lydford, for non-payment of tithes, which proceedings were stayed by an order of the Chancery side of the Court of Exchequer; and appointed to be heard February 4th, 1628, when William Barber (defendant) and his counsel appeared, but the plaintiffs made default. The Court then ordered "that the said cause shall receive a new tryall at the Court of Common Law before the same be determined in equitie in this Courte."

This trial took place at Okehampton, February 12th to April 8th, 1629.

Many witnesses were examined, and some of their evidence is very interesting, though not much of it deals with the church and parson.

The following was one of the questions put to witnesses by counsel on behalf of the defendant:

"Is not the Town and Burrough of Lydford wherein the parsonage and Church of Lydford is, a very poore towne, and the poore men relieved by the defendant now parson; and doth not the said parson keepe a goode house for the entertainment of his neighbours and the poore; and is he not a man of so just and good conversation, and one that duly dischargeth his cure, and a constant dweller in his said parish and one that generally demeaneth himself well; and hath he not a great charge of children?"

Mr. Barber himself alludes unkindly to his family in his answer to the plaintiffs' bill of complaint. He states that he had been "lately presented to Lydford parsonage by the King's Majesty. And having undergone great charges and expenses thereabout, his personal estate also small, and his charge of wife and children very burdensome."

This statement as to the expenses he had incurred since his coming to Lydford is corroborated by William Pellowe, of Lydford, who also says "that the said Parsonage standeth in a cold and barren soil, and the Glebe lands belonging to the said Parsonage are worth about four pounds yearly." The ordinance of Bishop Bronescombe is referred to by several witnesses, who state that they have seen a copy of the record taken from the Bishop's Registry at Exeter.

The facts having been thus ascertained, the case was taken back to Westminster, where it was decided in favour of the rector.

As William Barber held Lydford from 1624 to 1644-5, he must have been the rector referred to by William Browne as having been so insufficiently attired.

"Near these poor men that lie in lurch,²
See a dire bridge, a little church,
Seven ashes, and one oak ;
Three houses standing and ten down.
They say the rector hath a gown,
But I saw ne'er a cloak.

"Whereby you may consider well
That plain simplicity doth dwell
At Lydford without bravery ;³
And in that town both young and grave
Do love the naked truth to have—
No cloak to hide their knavery."

This is not a pleasing picture of our Lydford folk ; but Browne was prejudiced, and, still more important, he was hungry when he visited that town, and a hungry man's impressions are apt to be sad-coloured.

At all events, the rector and his parishioners seem to have lived in peace after the great law suit. Tithes were paid regularly ; and William Barber lived among them until his death, which took place during the Civil War. It was perhaps only natural that as the living was in the gift of the king, who had lately been with his army in the West, and was at this time at Oxford, an army chaplain should be the next rector.⁴

Richard Pote was a Devonshire man, a graduate (A.B.) of Gloucester Hall, Oxford. "A man," says Walker in his *Sufferings of the Clergy*, "of a good life, compleat abilities, and zealously affected to the Established Church and Monarchy."⁵

"At his entrance on the ministry, he became a chaplain to Sir James Smith, a colonel in the king's army, who in a short time procured for him the rectory of Lydford, in Devon, valued at that time at about £140 per annum, into which he was legally instated, by the Venerable George Parry, January 13th, 1644-5, to the good liking of his parishioners in general.

"But his firm adherence to the king's party, and his siding

² In the castle.

³ Finery.

⁴ *Biog. Dict.* "Life of Charles I."

⁵ *Sufferings of the Clergy*, &c., by Rev. John Walker, M.A., rector of St. Mary the More, Exeter, 1714. Pages 328-9.

visibly and openly to the loyal gentry in that country, particularly Colonel Tremayne, Justice Wood, Mr. Bidlake, &c., distasted some few of his disaffected parishioners, and some committee men of the parishes adjoining, insomuch that one Valentine Cake, a leading man there and a great timeserver, put one Mr. Richard Potter, a Holy brother and a gifted man, upon a desperate attempt of turning Mr. Pote out of his church and rectory; of which Mr. Potter (he failing in his project and dying, as I am informed, soon after) I know no more than the discovery he himself hath left us in a letter under his own Hand, and yet in Being, which to show the spirit of the man and of his party is fit to be here inserted. He directed it to the said Mr. Cake, and it is as follows:

“Mr. Cake—

“Happiness attend you, etc. I have been lately at Lydford thinking to have met with you but according to your wife's direction I passed Dart, and unhappily missed you where I supposed to have found you.

“The Forresters in the Moore are backward in Artickling against the Party; you know whome I meane, and they tell me they never formed any Articles as yett, and I perceive a Backwardness in the home Dwellers, soe that my incouragement is but small to proceede in the business, which you have sette me upon. Mr. C—— willett me to proceede and some of the Committee have incouraged me, before whom I should have appeared the beginning of the insewing week; but finding such letts and hinderances in those whom I expected most forward and a backwardness in such as seemed most willing and desirous I am in doubt what course to take.

“Articles must be invented and produced, as that the man hath been Chapling unto Wood, how that he is an illiterate man, and profane and scandalous to the ministry. Many more you must procure to be drawn up against him, for the displacing of him. What you doe herein for me, I will freely reward you in your future tythes, thus with my true affection, I remayne,

“Your unfayned friend,

“Richard Potter.

“Harlacombe, Feb. 6th, 1646.

[Superscribed]

“For Mr. Valentine Cake,

“These at Lydford.”

“This letter coming to Cake's home in his absence fell into the hands of his son Arthur Cake, a young man of a quite different stamp from his Father, who, expecting some mischief in this letter on some Light he had from the bearer, opened and delivered it to Mr. Pote, who preserved it through a long Pilgrimage of affliction; and since his death, his widow transmitted it among some other Papers to his immediate successor [Rev. David Birchinsha, who

also furnished Mr. Walker with these facts about Richard Pote] who brought it to me, and from that worthy original I took out the copy above written.

"But that attempt miscarrying, another in a short time after took effect. For one Clement Hatch, a more plausible man of the same Kidney, by the same method of invention, and by the help of Mr. Nicholas Row, of Lamerton, a man of great Sway in those days in that Part of the Country, obtained an order of Committee for Mr. Pote's Place, which he forcibly took and kept for fifteen years; viz., from 1647 to 1662."

This Clement Hatch is referred to in the Parliamentary Survey of 1649 (now preserved in the Lambeth Library).

"And they [the Commissioners] further say that Lidford is a parsonage. The present incumbent is Mr. Clement Hatch, an able preaching minister, and placed there by order of the Committee of Devon. The parsonage house and glebe lands worth per annum five pounds. The Sheafe and privie tithes worth the annum nine pounds, which the Incumbent receiveth for his salary beside the tithe of harvest.⁶

"And we consider that the villages of East Lanxton and West Lanxton, and all such other tenements and villages situate, lying, and being on the east side thereof, being within the parish of Lamerton, and also all such tenements within the parish of Bridestowe, Raddon, Batchwill, and Shillford, with two tenements lying within the hamlet of Willsworthy called Beardon, and the adjoining tenements, are fit to be united to Lidford."

Mr. Hatch is also referred to in the action begun in 1702 for recovery of tithes. The evidence is given by Walter Badcock, aged 78; of Petertavy, who states that about fifty years since he lived with his mother in the parish of Tavistock, and depastured sheep on Dartmoor. During his absence from home, Mr. Clement Hatch called several times, and demanded tythes, "and threatened to bring an exchequer suite for the same if it were not payd speedily." Walter Badcock went to Mr. Hatch's house, "and told him he conceived there was nothing due to him for tythes, yet nevertheless this deponent did then lay down on the table three pounds of his own money in presence of diverse persons, and then told the said Mr. Hatch to take soe much thereof as was lawfully due to him for tythe." Five shillings is the sum named by Mr. Hatch, but Walter Badcock refusing to pay, half a crown, and finally sixpence is asked for, but the refusal is twice repeated, "whereupon Mr. Hatch told him, the deponent, to take his money and be gone; which

⁶ *Augmentation of Church Lands, 1647-1651.*

this deponent did, and since that tyme there was not anything demanded of him for tythe."

Clement Hatch's name is not to be found among the long list of ejected ministers given by Calamy. If we again return to the *Sufferings of the Clergy*, we shall find the reason of this omission.

"After the Restoration, Mr. Pote being grown so poor and stricken in years, Hatch thought fit to conform, and endeavoured all he could to keep him still out of his Living. But Mr. Pote, who had been forced to shift from place to place in Cornwall to teach a few children where he could be admitted for Bread, found some of his old friends yet alive, who helped him to bring down a Trial upon an Ejectment against this Intruder, and obtained a fair Verdict, and soon after the Re-possession of his Church and Rectory. And now was Hatch's wrath and malice raging more than ever, carried him into Dartmoor among the Forresters there (whose Moor-Tithes making up Two Thirds of the Profits of the whole Rectory of Lydford), he made it his business to possess these moor-men that their tithes were not due to the Church of Lydford; that they were great Fools if ever they paid one farthing more there, that Pote was grown very poor and old, and not able to contend with them. This hath been given in Evidence to a controversie since depending about those Tithes, and this advice proved so pernicious, this poison so fatal, that these Forresters by their number and strength baffled the poor old man out of all or most of his Forest Tithes to his dying day; so that £140 a year was by this time reduced to less than fifty."

The evidence alluded to I have not been able to discover, although there was a trial in the Court of Exchequer in Hilary Term 36° Car. II. (1684), in which the defaulters accused Richard Pote of having "out of a Surly and a Greedy mind and humour or covetous desire, sought to rest and extort from His Majestie's Subjects and Tenants Tythes which he well knowes are not due, and doth not belong in any way to him." The judge was not, however, of this opinion, and John Crossman and others were ordered to pay their tithes.

But if they obeyed many others refused, and Mr. Pote, because of his poverty, was unable to proceed against them. The recovery of tithes at this period was a difficult and expensive process. Joseph Glanvill, in his essay on preaching (1678), says, "The present ways of recovery of these dues are chargeable and scarce effectual at last. . . . So that generally the livings . . . are fallen from what they were before our unhappy troubles a third part at least in value."

During the time Richard Pote was rector "a true Terrier of the Rectory of Lidford" was taken. The description of

the rectory itself is much the same as in William Hunt's time, but it contains a few more details :

"The houses thereunto belonging is a hall and parlour and two Chambers, the Hall and parlour paved under foote, on deary and on wood-house earthen floore. The outhouses is a Barne, a chitching, [kitchen] stable, and Linney house with earthen floores, the walls of all the said houses are of stone. The Arbories thereunto belonging containinge halfe quarter of an acre."

Then follows a list of the Glebe Lands :

"Given under our hands the 4th day of July, 1680.

Richard Pote, Rector,
John Burrow, Churchwarden,
William Burrowe, Overseere."

In 1688 Richard Pote died after a long and eventful life, having held the living for forty-four years, although he had only been in residence for twenty-nine. He was succeeded, June 29th, 1688, by David Birchinsha, M.A., who was presented by James II., the last Stuart King, who in December of the same year fled from England. The Rev. David Birchinsha was not unnaturally displeased to find that his new living, instead of being worth £140 per annum, should only bring in fifty pounds. And very soon after his institution he began a lawsuit against the defaulters for tithe, which lasted a very long time, being continued by his successor, and only brought to an end in 1706. The depositions of witnesses were taken by two officials sent from the Court of Exchequer, William Hume and Thomas Granger, at the house of William Gill, innkeeper at Lydford, beginning on the 24th of March, 1701. Many witnesses were examined. Those for the defendants sought to prove that their dwellings were not in the parish of Lydford, or the tythable places thereof; and also that the £3 paid annually to the rector by the Duchy or the Crown "was paid in discharge of all tythes for and in respect of the same." Of course, one glance at the original grant in 1237 proves the absurdity of this second theory. The witnesses included John Walter, of Lydford, Charles Arscott, of Sampford-Courtenay, John Burrow, of Lydford, who says "that in the year 1699, being constable of the parish of Lydford aforesaid, he received a warrant under hands and seals of Sir Francis Drake, Bart., John Calmady, Esq., and Courtenay Crocker, Esq., deputy-lieutenants of the said county of Devon (which warrant was delivered to him by Arthur Edgcombe, one of the commissioners in this cause), for the assessing and charging of the said complainant (David Birchinsha) for and in respect of the said rectory and

profits of the benefice of Lydford aforesaid, with the providing and maintaining of two able foot soldiers with pikes and other habiliments and furniture thereunto belonging; and this deponent further saith that the value and profits of the said rectory of Lydford, as he verily believes, without the profits of tyth wool of sheep depastured on the said forest of Dartmoor, will not amount to £30 per annum, and more he sayeth not.”⁷

James Sleaman, yeoman, of Lydford, 50 years old, says that about eighteen years since he was “Port Reeve of the said Burrough of Lydford, and by virtue of his office collected the King’s Rent within the Burrough of Lydford.” And that out of the said rents he paid to Richard Pote, then rector of Lydford, the sum of £3, and that Richard Pote gave him a receipt for the sum of £3, and read the same unto him (as this deponent being illiterate believes), and that he afterwards delivered this receipt to the king’s auditor. Education in Lydford must have been at rather a low ebb when the chief magistrate of the town could neither read nor write.

Stephen Cundy, of Petertavy, 76, Peter Elford, Marytavy, 80 (who had a wonderful memory, as he “very well remembers, about sixty years since, his father paying tythe wool to Mr. Barber when Rector of Lydford”), Roger Glanvill, of Marytavy, Stephen Reddicliff, of Bridestowe, weaver, 50, Stephen Cory, gent., of West Putford, 56, who deposes that he had been employed by Mr. Pote to receive tithes for him, William Griffith, of Walkhampton, Roger Cake, of Lydford, seventy years and upwards. This old man, who states that he had known the forest of Dartmoor for three-score years, was the son of the Valentine Cake referred to in Walker’s *Sufferings of the Clergy* as having been a leading man in Lydford, and the leader of the opposition to the Rev. Richard Pote. Roger Cake, “being the eldest man born and living within the parish of Lydford, is by virtue of an ancient custom Corroner during life of the Borough and Manor and whole Parish of Lydford.” He states also the duties of the coroner; and says, referring to the £3 paid by the Duchy to the rector, “that he with others of the King’s free tenants within the said Borough who are venville men have never understood that the summe of Three Pounds paid out of the King’s High Rents due from the said Borough of Lydford did exempt them from the payment of Tythe-wool, but only in satisfaction of the Tithe of the Agistments of forest or Barren Beasts depastured on the said Dartmoor.”

⁷ From the original depositions in the Public Record Office.

Roger Harris, of Marytavy, aged 70 years, was employed by Mr. Clement Hatch to collect tithe-wool, or composition for the same, from the inhabitants of Tavistock, Ashburton, and other adjacent parishes who depastured their sheep on Dartmoor, and he does not remember any person to have refused payment of the same.

John Clement, of Lydford, a prior or moorman, and Edward Hancocke, of Okehampton, fuller, and several others gave evidence; then John Powell the elder, of Lydford, yeoman, aged 70 years and upwards, who states that he "hath been twice Port Reeve of the said Burrough of Lydford, &c."

An adjournment was made to the house of Thomas Wyatt, innkeeper, at Tavistock, where more witnesses were examined from April 12th to 15th. As these witnesses lived for the most part in Tavistock, their names are of no importance in relation to Lydford. The trades of maltster, butcher, fellmonger, and cordwainer are represented. The cordwainer, Edward Bound, says that although his father did not, to his knowledge, pay tithe, "yet Mr. Richard Pote, then rector of Lydford, did frequently come to his father's shop, and had at diverse tymes severall paires of shoes of his said father, for which shoes this deponent sayeth that he never knew that his father received any money of the said Mr. Pote."

William Gill, the innkeeper, of Lydford, aged 43, says that the rectory of Lydford, *without* the tithe-wool, doth not exceed the value of thirty pounds per annum, as he verily believes. He also alludes to some documents then exhibited, the originals whereof were in the custody of the then constable of Lydford. Many more witnesses are examined, but nothing very interesting about the rectors is elicited. Only Roger Charles, of Lamerton, yeoman, 75 years old, says "that about forty years since Mr. Pote demanded tythe from him which he refused to pay. And afterwards meeting the said Mr. Pote in an alehouse he did again demand money of this deponent for the tythe of his sheep, which this deponent refused to pay. Mr. Pote then desired him to pay for a halfe dozen of ale they had then drunk, and he would never demand any more money of him for tythe, though he (this deponent) should keep 500 sheep there. Whereupon this deponent did pay sixpence for the halfe dozen of ale, not as due for tythe, but in common civility, having drunk a parte of the said ale." It is needless perhaps to say that this witness is for the defendants; but in spite of his testimony, the Court decided in favour of the plaintiff, the rector, who at this time^s was no longer David Birchinsa, but Thomas

^s February 26th, 1704.

Burnaforð, M.A. An exchange had taken place in 1701, and on September 25th in that year the Rev. Thomas Burnaforð was instituted on the presentation of King William III. The law-suit had been continued by the new rector, and must have been a costly affair, as the defendants in the final trial in the Court of Exchequer retained the Attorney-General, Sir Edward Northey, Mr. Serjeant Hooper, and four other counsel, the rector having Mr. Serjeant Pratt and three others. The defendants are ordered "to account with and satisfy the plaintiff for the tythes, &c., except only for tithe lambs, payable to the viccar of Whitecombe, pursuant to the award of Walter, Bishop of Exon."⁹ A singular mistake is made in referring to the "Tythe of Herbage" for the forest and barren cattle fed on the forest, for which the "said summe of three hundred pounds is payable to the plaintiff." The "hundred" interpolated would no doubt have been very welcome to the rector of Lydford! Robert Barker, Esq., Deputy to Her Majesty's Remembrancer, is appointed to settle the several amounts due from the defendants to the plaintiff "with all the speed he can." On June 10th, 1706, he presents his report, and the defendants are to pay sums varying from 8s. 1½d. to 1s. 8d. The costs must have been very much more. No doubt this long and costly suit taught the dwellers on the Moor that it was less troublesome to pay their tithes than to appeal to the law.

The Rev. Thomas Burnaforð deserves to be recorded as one of the good rectors of Lydford. He held the living for nearly forty years, and did much to improve the church, according to his light. The square pews, gallery for musicians, high reading-desk, and pulpit which he erected we can scarcely call improvements; but probably the old benches were decayed, for Lydford Church, like most of the moorland churches, is very damp. He put up wooden tablets bearing the Ten Commandments, and others inscribed with passages of Scripture, and with his name and those of his churchwardens. The gilt and painted royal arms, with George II.'s name, must have been put up by him or his successor. All the Register Books, now extant, begin in his time—the Baptisms in 1716, the Deaths in 1717, and the Marriages in 1719. Possibly he provided a chest to keep the books in, and that may be the reason that the volumes begun by him have been preserved, while the earlier ones have perished. He died May 4th, 1740, and Hugh Tonken, B.A., was instituted 22nd August, in the same year, on the presentation of Frederick Lewis, Prince of Wales, father of George III., of

whom, save "that he was alive and is dead," and that he made this presentation, "there is no more to be said."

Hugh Tonken was, according to his own statement, in the Register Book at Lydford, "of Trenonce, in the parish of Newlyn, in y^e County of Cornwall, chaplain to the Right Honourable Lord Viscount Falmouth, by whose favour he obtained the living. Anno 1745, the parsonage house was from a very mean and poor dwelling, unworthy of a clergyman, repaired at a great expense, and converted into a convenient and decent dwelling by the said Mr. Tonken." "This convenient and decent" dwelling was, I suppose, the same as that called a "hovel" by the Rev. Morris Fuller, who pulled it down.

Hugh Tonken exchanged, 5th October, 1750, with William Hoblyn, B.A. While Mr. Hoblyn was rector a perambulation of the parish was made, and it is a curious fact that much that was then assigned to Lydford is now claimed by Bridestowe. This may account in some measure for the great difference in the accounts of the area of Lydford Parish. It was formerly stated to contain 90,000 acres, and now only 56,333 are assigned to it in the Diocesan Calendar.

William Hoblyn died after nine years, and was succeeded 20th December, 1759, by John Hockin, M.A., on the presentation of King George II. He resigned ten years later in favour of a gentleman of the same name, possibly his son.

He (Thomas Pearce Hockin, B.A.) was admitted at Windsor, of which place Bishop Keppel was dean, 1st December, 1769, on the presentation of King George III. He held the rectory for more than twenty years, but of his life and actions I have nothing to tell. He has left his name on the bells, the inscription on the tenor bell being—

"I to the Church the living call;
And to the grave I summon all.

"Thomas Pearce Hockin, Rector, T.P., C.P., 1789."

There are six bells now, of very good tone, all bearing the same date. He died March 9th, 1790,¹ and the new rector—Christopher Cunningham Vickry, B.A.—was admitted in London on the presentation of George Augustus Frederick, Prince of Wales, afterwards George IV. Mr. Vickry held the rectory for less than three years; and it is doubtful if he was ever resident at Lydford, as his name is not to be found in a book begun by Thomas Burnaford, and containing

¹ Thomas Pearce Hockin was the son of Rev. John Hockin, of Okehampton. Born at Okehampton. Matriculated 19th May, 1763, age 17. Elected 30th June; full Fellow 2nd July, 1766; resigned 29th June, 1770, having been instituted to Lydford, in Devon. B.A. 9th June, 1768; M.A. 31st May, 1770. Vicar of Okehampton. Died 1789.—BOASE's *Registrum Collegii Exoniensis*, p. 108.

the names of subsequent rectors. His successor was William Foorde Michell, M.A., admitted January 23rd, 1793, in London, on the same presentation. Mr. Michell enjoyed the rectory for the long space of thirty-three years; but he had another living in Cornwall, and Lydford probably suffered then as it certainly did subsequently, from the evils of non-residence.² On Mr. Michell's death, Bidlake Bray, M.A., was presented, October 26th, 1827, by King George IV. Mr. Bray quickly decided that the air of Lydford did not suit him, for John Rooke Fletcher, B.D., was appointed, May 23rd, 1828. This Dr. Fletcher may have been a good man, but he did not do much good in his parish. He held at the same time the living of Quethiock, in Cornwall, and, I believe, commonly resided there; he certainly did not live at Lydford. As about this time the Duchy Courts, which had been held at Lydford before 1296, were, at the instance of Sir Thomas Tyrwhitt, removed to Princetown, the ancient borough of Lydford and its inhabitants were deprived both of the law and the gospel. Their spiritual wants were looked after by a succession of fledgeling curates, most of whom, it is said, first read themselves in as curates of Lydford; and Dr. Fletcher considered he fulfilled his duty towards his parishioners by providing these young gentlemen, and by riding over on rare occasions to visit them. On these visits—never extending beyond a few hours—he displayed the thrift for which he was famous by telling the clerk, who took charge of his horse, to give him (the quadruped) “plenty of water, a little hay, and *no* corn.”

This same parish-clerk of Lydford (Peter Hill) is the storehouse of anecdote and legend relating to the parish church and her priests in these later days. He was in sole charge of the church so long that he had almost begun to regard it as his own property, the boy curates being always more or less under his dominion. His father had been parish-clerk before him, though Peter did not succeed without a struggle. For the dignity had another aspirant, who, on the first Sunday when Peter (with the necessary “papers” in his pocket) occupied the clerk's desk, placed himself close beside his rival, and began to read in stentorian tones. An unseemly struggle ensued, and the would-be clerk “tore all the

² I am indebted to the kindness of Prebendary Hingeston-Randolph and Mr. Burch, the registrar, for the following information about William Forard Michell: Ordained Deacon 17th June, 1789. 15th June, 1789, licensed to the Curacy of Combetsaignhead at a stipend of £40 a year. On the 12th October, 1790, ordained Priest. 23rd January, 1793, instituted to the rectory of Lydford; and on the 3rd November, 1807, instituted to the rectory of S. Knyn, otherwise S. Martin, near Looe.

buttons off Peter's weskit;" "but," relates the injured one 'with great gusto, "I sent un to Bridewell for it." Scenes of this description did not often occur even in Lydford Church, nothing more exciting than a burial or, still more rarely, a wedding taking place. Until quite recently (1886) all the parishioners had to come to be married at their parish church; and tales are told of the clerk's accommodating watch, which always permitted the ceremony to be over before twelve o'clock, in spite of tardy arrivals—or drowsiness on the part of the curate, whose sleep had been unduly prolonged.

In 1867 Dr. Fletcher resigned, having held the living for thirty-nine years, and on May 23rd Morris Joseph Fuller, M.A., was presented by Albert Edward, Prince of Wales and Duke of Cornwall. Mr. Fuller had been a master at the Tavistock Grammar School. He resided at Lydford, and rebuilt the rectory, choosing for the new house the type often met with in old French chateaux, the result being a building imposing in appearance, but perhaps hardly suited to its surroundings or proportionate to the rector's income.

Mr. Fuller also "built two mission school chapels at Dartmeet and Postbridge, nineteen miles distant from the parish church respectively." The Rev. W. K. W. Chafy-Chafy was curate-in-charge for three or four years, while Mr. Fuller was rector, and to his liberality the church owes her store of vestments, and rich altar furniture. He also removed the old high pews, substituting chairs. The choir seats in the tower had already been removed when a harmonium had been introduced instead of the brass band which formerly led the music in the church. The immediate result of this innovation was the migration of the musicians and their instruments to the Bible Christian Chapel in the village. When the high pews were removed, the piscina in the south aisle was discovered; it had been carefully covered up, and contained a mutilated alabaster female figure. The larger piscina and the rood staircase were discovered early in the present century.³ Perhaps it may be also here mentioned that there is in the Albert Memorial Museum at Exeter a large brass alms dish, said to have belonged to Lydford Church.

In 1879 Mr. Morris Fuller resigned, and the Rev. James Hatchard Bennett, M.A., was presented by the Prince of Wales, and now holds the rectory.

¹ ² By the Rev. T. Lawrie, curate in 1811 (MISS EVANS, *Home Scenes of Tavistock, &c.*).

APPENDIX.

ROT. PATENT, 21 HENRY III. MEM. 6 (1237).

REX dedit et concessit Deo et ecclesia Sancti Patrochi de Ludeford et capellano ministrando in eadem ecclesia ad sustentacionem suam, quicumque pro tempore ibidem capellanus fuerit, decimam herbagii More de Dertemore. In cujus rei, etc. Teste ut supra. [Teste Rege apud Wudestok, 12 die Julii.]

Et mandatum est Herberto filio Mathei quod persone ejusdem ecclesie decimas predictas haberi faciat. Teste ut supra.

BISHOP BRONSCOMBE'S REGISTER, FOL. 16b.⁴

Ordinacio de Lideford.

Anno eodem, apud Credetoniam, xij Kalendas Septembris (20 Aug. 1260) exivit Litera: Universis, etc., Episcopus, etc. Fide dignorum assercione intelligentes quod quidam Parochiani Ecclesie de Lideforde, villulagia que dicuntur Babbeneys et Pushylle inhabitantes, adeo distant ab eorum Ecclesia Matrice predicta quod eam pre nimia distancia nullo modo visitare possunt quociens eis fuerit oportunitas, dilecto filio Officiali Archidiaconi Tottoniensis nostris Literis dedimus in Mandatis ut, facta Inquisitione sollempni in pleno Capitulo ejusdem Loci, nos literatorie reddet certos an homines predicti ad erectionem sufficerent Oratorii; item, que Parochialis Ecclesia villulis ipsis vicinior existat, in qua iidem homines sine prejudicio juris alieni audire Divina et Ecclesiastica percipere valeant Sacramenta, et quanto eodem villule distant a Matrice Ecclesia predicta, et si, tempestatibus et inundacionibus aquarum exortis, Parochianis ipsis Matricem Ecclesiam predictam visitare volentibus via longior debeatur. Cumque per Certificacionem Officialis memorati invenerimus quod, incolis ipsis ad construccionem Oratorii minime sufficientibus, Parochialis Ecclesia de Wydecumba Locis ipsis plus aliis omnibus est vicina, et quod Loca predicta a Matrice Ecclesia de Lideforde sereno tempore per octo, et tempestatibus exortis, in circuitu, per quindecim distant miliaria, salutem animarum, sicut nec debemus, negligere nulla ratione volentes, Ecclesiarum ipsarum Rectores ad nostram fecimus presenciam evocari. Rectoribus, igitur, predictis coram nobis constitutis, et exposito eisdem hujusmodi periculo, ac, depresso (*sic*) consensu utriusque Ecclesie Patronorum, Ordinacioni nostre

⁴ (Page 204 in Prebendary Hingston-Randolph's Edition.)

se supponentibus promittentibusque bona fide voluntati nostre parere in hac parte, ac nostram Ordinationem predictam observare inperpetuum, de consilio prudentium virorum nobis assistentium taliter ordinavimus: videlicet, quod predictorum et adjacencium Locorum incolis, sicut in veritate sunt, parochianis Ecclesie de Lideforde perpetuo remanentibus, in Ecclesia de Wydecumbe inposterum Divina audiant, et omnia in vita et morte Ecclesiastica percipiant Sacramenta.

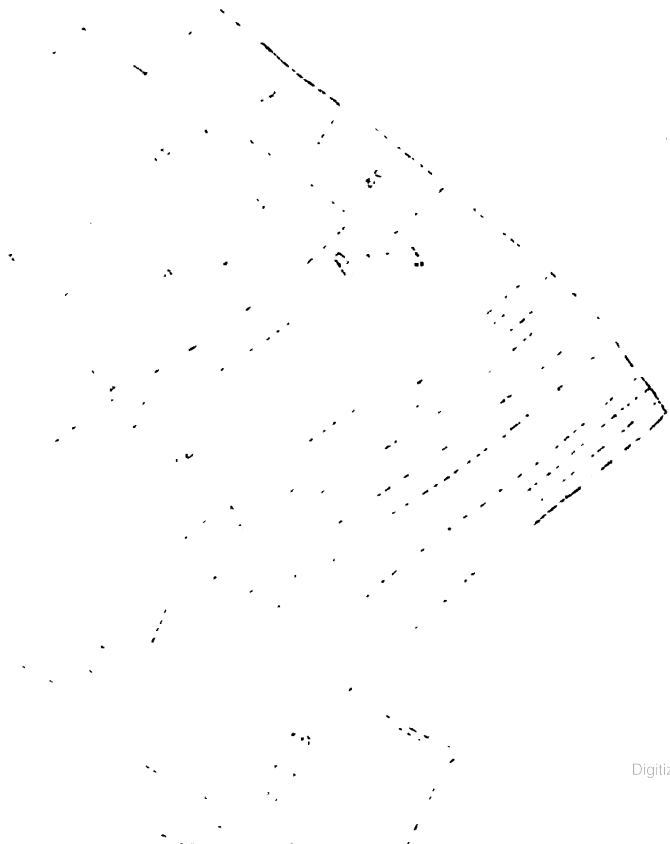
In coopertura et fabrica Ecclesia de Wydecumba, clausura cimiterii, subsidio luminarium, et deferendo Pane Benedicto, cum ipsius Ecclesie parochianis contribuant; consuetudines ipsius Ecclesie in visitacionibus infirmorum, benediccionibus nubencium, in purgacionibus post partum, in baptismatibus parvulorum, in mortuariis et sepulturis morientium, observent; offerant quoque ibidem sollempniter ter in anno, et decimam nichilominus agnorum eidem Ecclesia cum integritate persolvant. In signum, vero, subjeccionis et agnicionem juris parochialis quilibet incola dictorum Locorum terram tenens, semel in anno, videlicet die Sancti Petroci [4 June], in Ecclesia de Lideforde sollempniter offerat, et omnes decimas et obvenciones majores et minores, hiis dumtaxat exceptis que superius enumerantur, Matruci Ecclesia sue de Lideforde, sine qualibet diminucione et contradiccione, persolvant. In cujus, etc.

LIST OF RECTORS.

- 1237 Michael, Sacerdos.
 1248-9 Bartholomew de Thetteburn.
 1272 24th September. John dictus Forbur.
 1272 27th November. Adam de Bremelle. Became a monk.
 1284-5 Hugh de Shuptone.
 1328 8th June. William de Welyngoure. Resigned.
 1328-9 20th February. Reginald de Astone. Resigned.
 1332 15th May. Augustine de Botrecomba.
 1349 11th April. John de Prestone.
 1350 6th April. Laurence de Wyke.
 Robert Tappot. Died.
 1385-6 23rd January. William Wencelawe. Exchanged.
 1386-7 7th February. Thomas Baret. Exchanged.
 1388 28th June. Philip Nywatone. Exchanged.
 1392 20th April. Henry Legge. Exchanged.
 1424 28th July. Richard Milward.
 Richard Wekys. Died.
 1487 19th November. Richard Shelston. Died.
 1533 23rd September. George Carew. Resigned.
 1553 22nd November. Richard Michell. Died.
 1570 30th November. Anthony Randal. Deprived.

- 1580 16th April. Peter Dunkan, M.A. Resigned.
1583 11th September. Francis Myddleton. Resigned.
1584 9th September. John Bickle. Died.
1589 25th June. William Hele, M.A. Resigned.
1598 21st November. William Hunt. Died.
1624 30th November. William Barber. Died.
1644-5 13th January. Richard Pote, B.A. Ejected
1647 by Clement Hatch [*intruded*].
1662 Richard Pote. Re-instated. Died.
1668 29th June. David Birchinsha, M.A. Resigned.
1701 25th September. Thomas Burnaford, M.A. Died.
1740 22nd August. Hugh Tonken, B.A., on whose cession,
1750 5th October. William Hoblyn, B.A. Died.
1759 20th December. John Hockin, M.A. Resigned.
1769 1st December. Thomas Pearce Hockin, B.A. Died.
1790 9th March. Christopher Cunningham Vickry, B.A. Died.
1793 23rd January. William Foorde Michell, M.A. Died.
1827 26th October. Bidlake Bray, M.A. Resigned.
1828 23rd May. John Rooke Fletcher, B.D. Resigned.
1867 23rd May. Morris Joseph Fuller, M.A., on whose cession,
1879 19th May. James Hatchard Bennett, M.A.

STRAIGHTENING OF THE



NOTE ON "BRAUNTON GREAT FIELD."

BY SIR J. B. PHEAR, M.A., F.G.S.

(Read at Tavistock, July, 1889.)

At the meeting of our Association last year in Exeter our late distinguished fellow-member, Mr. Robert Dymond, by whose death the Association has sustained a loss which we all deeply deplore, read a valuable paper on the "Book of the Customs of the Manors of Braunton," in the opening passages of which was mentioned, as a peculiarity of one of the manors, namely, Braunton Gorges, on the authority of Mr. Lipscomb, its present steward, "the existence of scores of allotments, or undivided plots, in 'Braunton Great Field,' varying in size from a few perches to perhaps a couple of acres."

Through the kindness of Mr. Lipscomb, and under the guidance of Mr. W. H. Lock, Mr. James Day, and Mr. James Reed, I have, since our last meeting, been afforded facilities for visiting "Braunton Great Field," and Braunton Down, and have been enabled to ascertain facts relative to both which seem to be worth recording, as serving to indicate that the first of these unenclosed arable lands, if not the other, is in some degree a survival or representative of the old Anglo-Saxon common field cultivation.

The "Braunton Great Field" is an open hedgeless tract of rich alluvial land, three to four hundred acres in extent, lying between the village of Braunton on one side, and the marshes which at this part border the estuary of the Taw on the other. Its surface is a dead flat, rising but little above the level of the marshes, and the soil is doubtless by origin a natural reclamation from the bed of the estuary.

The whole field is under arable cultivation in small unenclosed plots, amounting in number to several hundreds in

all. The lesser plots appear as a rule to approximate in area to half an acre, more or less, and the others to be multiples of this quantity, or very nearly so; very few, however, exceed the limit of two acres.

The annexed plan of the field shows the method of partition.

From this it will be seen that the entire area of the field is constituted of sixteen or seventeen different parcels or sections of unequal sizes, each bearing a distinctive name, derived evidently in most instances from some local feature. One section, for example, is named the Mastich (or that next the Marsh Ditch), another the Hayditch (or Hedgeditch), a third the Hedgelands, and so on. Each of these named sections is divided again into narrow parallel strips; and it is noticeable that generally the parallel strips of one section have a different direction from those of its immediately adjacent neighbours. The line of demarcation between any two strips is commonly indicated by a narrow unploughed balk, and that of the sections by a "bond" stone sunk in the ground at the corners.

The multitude of narrow strips into which the whole field is thus partitioned, amounting as already stated, to many hundreds, are distributed among a considerable number of separate owners in a seemingly capricious fashion. Some persons own very many of the strips scattered all over the field; that is to say, several strips in almost every division of it. Others have a few only, one here and there. But in all cases the strips of one owner are everywhere separated from each other by interposed strips of other owners. In 1875 Mr. Rolle, the lord of the manor, owned a considerable portion of the Great Field in a very large number of plots, averaging about an acre apiece in area; but he afterwards sold them.

The tenure of the plots is at this day unqualified freehold, subject to no seigniorial rights or claims, and most of the holdings are small.

So far as I can discover, there is no tradition in the parish directed to account for the present state of sub-division and ownership of the Great Field. All that can be gathered is, that in popular belief the arrangement has come down from time immemorial substantially the same as it now is. A very sufficient explanation, however, can be found for it, if the field be regarded as a specimen of the Anglo-Saxon system of communal cultivation, which has survived to our times, emancipated from all its original servitudes.

The named sections, each with its own direction of furrow, correspond with the "shots" or "furlongs" of the Anglo-Saxon field—the word "shot" implying direction or slope—and the strips of each section resemble very closely the "half acres" of which the "shot" was made up, the larger ones being plainly amalgamations of two or three of those of normal size. We have only to imagine that in this particular manor the "geneats" or "villeins" of former days managed in the course of time, either by purchase or otherwise, to free themselves from the claims of the lord; and then, bearing in mind that when two adjoining strips came by inheritance or other cause of transfer into the hands of the same holder, the division between them would usually become obliterated, so that a double-sized or treble-sized strip would be the result, we have before us a state of things corresponding exactly with the existing condition of the Great Field.

We can conceive that in the gradual development of the manorial system the usual course of change as time ran on, probably was, that in the first place the villeins, for valuable consideration of some sort, either completely cleared their shares in the common ground from all servitude to their superior lord, or converted it into a defined pecuniary payment or rent; then that strip by strip the shares of the smaller and poorer holders passed into the hands of the larger until, with the aid of a process of exchange, all the strips of a "shot" came under one owner, and were consolidated and enclosed with a hedge as a modern field to meet the requirements of altered husbandry. And it may perhaps be conjectured, without much risk of substantial error, that the transition from the manorial system of the Anglo-Saxon times to the landlord and tenant system which prevails now in England, was brought about by some such steps as these.

It is obvious that, under a process of this kind, the bulk of the communal land of the manor would in most cases gravitate into the hands of the lord; and it is accordant with this that Mr. Rolle had come to own so large a proportion of the "Braunton Great Field" as he did at the time when he parted with his interest in it. But if we ask further, How has it happened in this particular instance that so early a stage in the course of development (as compared with the modern state of things around it) should have become, so to speak, stereotyped, and rendered enduring? it is not easy to find a satisfactory answer. Doubtless, it

was quite an exceptional thing for all the villeins of a manorial common field to achieve entire freedom in their holdings, as I have ventured to suppose occurred in this case; and in the cause of this exception, whatever it was, lies the difference between the Great Field occupiers and their neighbours. But when once the small cultivator's freehold was established, there existed little or no force tending to disturb or alter it, and it would pass by inheritance or purchase unchanged from cultivator to cultivator, until at any rate quite recent days, when, by reason of social considerations, land became worth to a landlord much more than its mere cultivating value, and so the occupying owner often found inducement to sell his freehold, and become a tenant farmer. As regards, however, such a minute distributed ownership as that of the Great Field, the operation of an influence of this kind would be a minimum, and the small cultivator would probably continue unaffected by it. It is also perhaps worth noticing, as an exceptional circumstance in the case of Branton, that the *Domesday* return gives to the king's manor of that name the remarkable number of 40 villeins and 30 bordarii with 30 ploughs as against 1 plough only on the lord's demesne.

NOTE.—An extract from the Branton Rate Book, with which Mr. R. M. Atkins, Assistant Overseer, has been so kind as to furnish me since the foregoing paper was read, gives the following particulars for the Great Field at the present time: Area 354 a. 2 r. 6 p.; number of strips, 491; number of owners, 56, or thereabouts.

The plots formerly owned by Mr. Rolle were those numbered as follows:—623, 627, 628, 629, 636, 637; 649; 657, 658, 660, 663; 670, 673, 675; 685, 697, 710, 718, 719, 724, 726, 729; 747, 751, 753, 761, 763; 772, 778, 783, 785, 788; 789, 797, 798, 808; 809, 814, 818, 819, 828; 861; 876, 880, 891, 893, 897; 920; 926, 927, 933, 946, 951, 954, 956, 959, 963, 966, 969, 970; 988, 995, 1000, 1003; 1004, 1005, 1022; 1035, 1039, 1046; 1049, 1054, 1056. The semicolons divide the strips of the respective parcels.

THE NATURAL STORAGE OF WATER ON DARTMOOR.

BY D. RADFORD.

(Read at Tavistock, July, 1889.)

THE object of this paper is to direct attention to a Dartmoor subject which cannot claim the attraction of novelty. I believe, however, it is among those well-known facts the importance of which is not recognised until people begin to think about them.

It would, indeed, be difficult to say anything very new about Dartmoor, and especially so to a meeting of this Association, many of whose members are well acquainted with the district, and have contributed valuable papers on the subject to its *Transactions*.

We all know that Dartmoor is a mass of granite, standing high above the surrounding country, and forming in itself the chief watershed of Devonshire. Perhaps the best point of view to give one a general idea of the mass of Dartmoor is to stand on the high ground of Exmoor, and look across the lower country at the extraordinary block of high table-land some thirty miles distant, rising to an average height of 1200 feet above sea-level, and fringed by the rocky tors running up to 2000 feet.

Out of 130,000 acres, included in what is generally described as Dartmoor, a very small proportion is suitable for cultivation. The great bulk of the land is either covered with rocks and stones, or with large and deep bogs and morasses, or is only fit for mountain pasture for sheep and cattle. The subsoil everywhere is granite or granite sand. The picturesque scenery of Dartmoor has been so well described by others that it is not necessary for me to repeat their praises; but I have made hundreds of excursions on the

Moor, and I join heartily in appreciating Dartmoor as the gem and crown of Devonshire. For it is not only the wild and solitary centre of the Moor, and the rock-crowned heights which surround its margin, but also the beautiful river valleys which descend from every side, that properly belong to Dartmoor scenery.

The watershed of this high tableland is enormous. More than a dozen considerable rivers flow from it, besides a number of smaller brooks, and the fertility and beauty of Devonshire are largely owing to the Dartmoor streams.

I now wish to point out the source of these streams, and the disastrous effects which might be produced by interfering with their natural reservoir. As I have stated, Dartmoor is a mass of granite, and in this rock there are no springs. All the water which flows from this high ground to enrich the fields and valleys below is surface water gathered from the copious rainfall, and from the wet mists which prevail on the heights; and this water is stored up in the enormous sponge of wet peat, which covers thousands of acres of the highest part of Dartmoor. The rainfall of Princetown, as reported in our *Transactions*, is nearly a hundred inches in the year, and the wet mists brought in from the Atlantic by the prevalent south-west winds add to the total of moisture which is gathered into this natural storage reservoir. All our Dartmoor streams, without any exception, flow from the peat bogs, and their constant and never-failing character is owing to the immense reserve of water stored up in the peat. It is well known on the borders of the Moor that in dry seasons, when streams flowing from other sources become wholly or partially dried up, the Dartmoor water is sure to keep running. From careful enquiry and estimate I have reason to believe that about thirty thousand acres of Dartmoor are covered with peat bogs. These vary in depth from two feet to more than twenty feet, and I believe that a fair average would be from five to six feet deep.

From actual experiment I find that a cubic foot of saturated dense peat contains five gallons of water, or for one square acre of peat five feet deep there would be over one million gallons, and the total quantity stored in the whole area of this natural reservoir amounts to between thirty and forty thousand millions of gallons of water. Surely we find here a sufficient reason for the constant flow of the Dartmoor streams; for under no conceivable conditions could this enormous saturated sponge ever become dry, and therefore, while the peat bogs remain, these Devonshire streams will

continue their perennial and beneficent character. Not only do these Dartmoor rivers cause the lowlands to be well watered and fertile, and are of inestimable value to the agriculture of the county, but several important towns derive their water supply direct from them. The Plymouth leat takes its water from the Meavy, near Sheepstor; the Devonport leat takes its supply from a branch of the Dart near Princetown; and Torquay and other towns are similarly supplied. The great natural storage reservoir of the Dartmoor peat bogs has secured a perennial supply to these important towns, while at other places it has been necessary to create costly reserves. Liverpool is now completing the works which will make a Welsh lake seventy miles distant her storage reservoir at a cost of £670,000; while the Cumberland lake of Thirlmere is utilized in the same way for Manchester, and Loch Katrine for Glasgow—all these works being of a very costly character. Plymouth, like other rapidly-increasing towns, has now to deal with the same necessity for increased water supply, but this is owing to her increased requirements, and not from any diminution of the Dartmoor supply, which has never failed since Sir Francis Drake first brought it into Plymouth, some three hundred years ago. Had it not been for the natural storage of water in the peat bogs, it is certain that Plymouth, and the other towns deriving their supply from Dartmoor, would have been left without water in the dry seasons, when water is most necessary.

This great mass of peat, which holds the water in the manner described, must have been of very slow growth, and probably represents the accumulation of many centuries. It is chiefly composed of the decayed sphagnum moss (beloved of orchid growers) which one sees in bright green masses in the most humid places, but mingled with decomposed grasses and rushes, and other vegetable matter. The moor men cut their sods of peat for what they describe as "Dartmoor firing" every summer, and they tell me that no increased thickness can be noticed in the beds of solid peat from which they cut their sods. Of course there must be some growth, and there is no reason to doubt that this would sufficiently replace all the peat that is cut for local use by farmers and labourers whose homes are in the moorland district.

This fuel has been used locally for many generations, and makes a hot and fairly durable fire, emitting a light fragrant smoke, pleasant to most people. But it is only of recent date that it has been sought to make the peat an article of

merchandise far and near, and to treat the great bogs of Dartmoor as a mine, from which peat fuel could be extracted and sold, as coal is from a coal mine. During the last twenty years several Peat Fuel Companies have been started for this express purpose, and grants have been obtained from the Duchy of Cornwall for some three thousand acres of peat bog, or about one-tenth of the whole estimated amount on Dartmoor. The position of these grants is shown by their names. One is described as at Walkham Head, another as at Taw Head, and a third is situated at the head of the Rattlebrook, one of the chief branches of the Tavy. I have examined the bed of peat, twelve feet thick, from which the Rattlebrook flows, and have also seen the extensive and expensive adjacent works and buildings of the West of England Compressed Peat Company for making the peat into blocks of fuel, and for carbonizing the peat into charcoal. A branch railway several miles long was built by this Company to connect their works with the main line of the South-Western Railway Company at Bridestowe Station, and every preparation was made for the wholesale removal of the peat, which is the natural source of a considerable stream. Not only were these preparations made, but four thousand tons of peat were actually cut and prepared for removal during the first year's working of the Peat Company. Fortunately in the result no great harm was done; very little of the prepared peat was sold, and the quantity cut was very much less the second year than the first.

Before long the Peat Company had spent all their capital of £50,000, and their works are now idle and falling into decay. But it is by no means certain that this result followed as a matter of course. The Peat Companies were badly managed, and their capital wasted, and no sufficient sale was secured for their produce. It is, however, believed by competent judges that peat fuel might successfully compete with coal in many districts, and secure a profit for the producer, as well as some economy for the consumer.

The object of this paper is to point out the loss and danger to all the county if such projects could be carried out, and to awaken public interest in the obvious necessity for preserving the storage reservoir which keeps our rivers in perpetual flow. No profit or economy obtained from turning our Dartmoor peat bogs into fuel could ever compensate for the loss of water to our fertile lowlands, and to the many towns now supplied from Dartmoor streams. It is absolutely certain that if the peat bogs were removed, our rivers running

down from this high tableland in the centre of the county would become rapid torrents in the rainy season, and dry watercourses in the dry season. With the loss of their natural reservoir they would also lose their perennial character, and Devonshire would cease to be one of the most fertile and well-watered of English counties. It should be remembered that the land, when stripped of its covering of peat bog, is quite useless for any agricultural purposes, the subsoil being always granite or granite sand; while its high and exposed position would render cultivation both costly and difficult, even were the soil of a more suitable character.

I think I have not exaggerated the importance of my subject, nor the serious results which would follow the diminution of our water supply, and I venture to suggest that landowners and others, who are interested in the supplies of water which flow from the Dartmoor bogs, would have a legal remedy against any interference with their water rights. It is certainly possible that the High Court of Justice might grant an injunction to restrain the destruction or diminution of the natural reservoir from which the water flows. I sincerely hope that general attention will be drawn to this matter, and that public opinion will prevent the spoiling of our Dartmoor streams, and that Dartmoor itself may be allowed to remain in its natural state.

Let us be thankful for the wild beauty and pure air and health-giving character of our mountain district. Let us be thankful for the rock-crowned hills, the long slopes of mountain pasture, the picturesque river valleys, and, most of all, let us be thankful for the broad stretches of peat bog, from which descend so many never-failing streams to bless the country far and wide.

NEWS FROM THE WEST, 1643-1646.

BY ROBERT BURNARD.

(Read at Tavistock, July, 1889.)

THE newspapers published during the period of the struggle between Charles I. and the Parliamentarians are very curious reading. The news of the day, highly coloured, and too often made to suit the cause it champions, is interwoven with comments of the writer, expressed in language largely composed of virulent abuse and unworthy accusations.

The great Royalist organ, *Mercurius Aulicus*, published at Oxford, remains, according to Professor Gardiner, untrustworthy to the end. The same authority says that the Parliamentary papers began by inventing freely, but owing to competition—fifteen or twenty weekly papers being published in London for one at Oxford—they mend their ways in the matter of more reliable news, although some of them cannot refrain from covering pages of their issues with censures and refutations of the “lyes” of *Mercurius Aulicus*. Untrustworthy as these newspapers often are, they nevertheless are most interesting reading, especially when dealing with localities which are familiar to the reader.

The West of England played a very important part in this great struggle, and it is not surprising to find many allusions to the progress of the various great efforts which were made on both sides in Devon and Cornwall.

Of all the events in the West, the protracted and successful defence of Plymouth was by far the most important.

The prime importance of this was pointed out by Mr. R. N. Worth some fifteen years since, and has been lately confirmed by Professor Gardiner—the greatest living authority—who

states emphatically that the defence of Hull and Plymouth saved the Parliamentary cause.¹

Although there is little, concerning the main issues of the struggle, that is absolutely new and reliable, there are certain subsidiary sources of knowledge contained in these newspapers, which, related in quaint and curious language, throws some light on local occurrences during the siege period.

Early in the struggle Sir Ralph Hopton cleared the Parliamentarians out of Cornwall, the last stand of the latter during this period being taken at Saltash. *Mercurius Aulicus* thus describes the scene :

"That being come before *Saltash* he (Sir Ralph Hopton) found the same in better condition than he left it, being furnished with good store of *Ordinance* from the Towne of *Plimmouth*, and also very well manned by the Rebels forces ; which notwithstanding he gave a very hot assault upon it, his men adventuring very bravely upon the mouth of the Cannon, and carried it without the losse of any man, by which he wholly cleared the County of *Cornwall* from the hands of the Rebels."

Among the booty was

"A stout ship of 500 Tunne, wherein were 15 pieces of *Ordinance*, besides the value of the lading ; a fortunate and brave piece of service : and which addes much to the felicity thereof, bought with the least expense of bloud that could be imagined ; there being killed of the enemy but betwixt twenty and thirty, and of Sir *Ralph Hopton's* men not one that we heare of yet. A very little price for so great a victory."

The *Kingdomes Weekly Intelligencer* in an early number remarks :

"That it is indiscretion to looke through a multiplying glass on the actions of either side, and therefore no partiality shall (by mee) be used on either side."

This journal meekly refers to the capture of Saltash as follows :

"Sir *Ralph Hopton* since he reobtained *Salt-Ash* with the losse of ten men (the Parliament Forces defending it till their powder and shot was spent, and then went by sea to *Plimmoth*) is since advanced within two miles of *Plimmouth*, and let him take heed his too much confidence in the Arme of Flesh doe him not as much injury, as it did Colonell *Ruthen* in chasing of him."

¹ GARDINER'S *Civil War*, i. 229.

The advancing within two miles of Plymouth is announced by *Mercurius Aulicus* in the issue of February 8th, 1643.

"Those noble gentlemen in the West Sir *Ralph Hopton*, Sir *Nicholas Slayning*, Sir *John Berkeley*, Colonell *Ashburnham* have gotten *Plimpton*, and besieged *Plimmouth*; that the Earle of *Stamford's* Souldiers doe not onely refuse to fight, but flie from him daily, which puts the Towne to a necessity of yeelding if it be not yeelded before this time."

These newspapers give very contradictory reports of the progress of the siege, the Royalists alleging that the town was in great straits for provisions, founded on the statement that Sir *Ralph Hopton*

"Had lately taken a ship at *Falmouth barre* for *Plimmouth*, in which was one thousand pounds worth of Wheate and other Corne, and that they were so streightly besieged by the King's Forces, that they could have no reliefe by land; besides the great want they were in for money."

The *Intelligencer* admits that Sir *Ralph Hopton* "hangs as a cloud over Plymouth, but it dispels every day."

The same authority states that before attempting an earth-work on the outskirts of the town, the Royalists "went to prayers, and on their knees, in glasses of sack, used such expressions as are not fit to be mentioned."

Notwithstanding the prayers and the sack, the attempt was unsuccessful, and the Parliamentarians, gaining confidence, resolved to attack the Royalist forces entrenched at *Modbury*. To effect this diversion, a force, concentrating at *Kingsbridge*, marched on *Modbury*, and stormed the camp.

The account given by the *Intelligencer* describing the events in the West from the 21st of February to the 28th, 1643, runs as follows:

"The newes in the West is certified from hands of credit to divers Parliament-Men of the great overthrow given to Sir *Ralph Hopton* at *Modbury*, in which place there were 2000 men intrrenched. The fight begun about two of the clocke in the afternoone, and continued the rest of that day, and that night untill foure a clocke in the morning, in which time the *Cornish* Cavaliers lost a hundred men, and had twice as many wounded, and then forsooke their Workes, leaving behind them five peeces of Ordnance and about eleven hundred muskets, they took prisoners about 70 foot, and about 40 horse.

"The same day in the afternoon the Earle of *Stamford* fell upon Sir *Ralph Hopton's* quarters before *Plimmoth* and forced

him to forsake them, who drawing his Forces in a body in open field next morning with intention to give Battell, had newes brought him of the great defeat given to Sir *Nicholas Slany*² and the residue of the forces at *Modbury*. Whereupon he altered his resolution from a Battle to a Retreate and that in such hast, that he left one of his greatest pieces of Ordnance that he had in his Army behinde him."

In the action at Modbury reference is made to the services rendered by the clubmen. The manner of the weapons of these rustic warriors is thus described :

"Some had sad heavy clubbs, some thick quarter staves with iron & steel pikes at the end, others with a pike & a cicle, others with gardeners rakes with iron teeth, some with very long helved pick-axes, some with hammers, some with sawes instead of swords, and divers other such kind of weapons."

Mercurius Aulicus is silent on these events. It admits the raising of the siege of Plymouth, but attributes it to lack of ammunition in the Royalist forces. This want was partly replenished, according to this paper, by the seizure of a ship at Falmouth laden with powder, bullets, and all sorts of ammunition.

Negotiations now commenced, and a truce of twenty days agreed on ; and to make this binding "nine of the principall gentlemen of each county, not onely took their corporall oathes, but received the sacrament."³

This time was further extended, some hoping that a complete cessation of hostilities would result ; but the breathing-time thus gained was employed by the commanders on both sides in strengthening their positions and perfecting their organizations. The news of this treaty was received with dismay in London, and two Parliament-men—Master Prideaux and Master Nicholls—were despatched to the West to nip these pacific intentions in the bud.

Colonel Ruthven, who had been the chief in command for some time at Plymouth, had retired from his post, and had proceeded to London. Such an opportunity of scandalising the colonel was not to be missed, and the Oxford print was quite equal to the task.⁴

"It was advertised that Colonell *Ruthen* a *Scottishman*, who had so long commanded in the towne of *Plimmouth*, either foreseeing that the desired pacification betweene the *Cornish* and

² Slanning.

³ *Mercurius Aulicus*, March 13th, 1643.

⁴ *Ibid.* March 31st, 1643.

Devonshire men would sort unto an happy end, or having sufficiently enriched himselfe with the spoyles of both, was come to *London*, and had brought with him in money and money-worth to a great value. And yet for all this masse of treasure so quickly gotten, that his wife put a cheat on her host in *Exeter*, where she had lodged for a considerable time, shifting away without either payment or farewell, under pretence of going abroad to take the aire."

The peace proposals made very little headway, and at last broke down altogether. Active operations were again resumed, and the first move scored a success on the side of the Parliament. The action on Sourton Down is thus described by the *Kingdomes Weekly Intelligencer* of April 25th to 2nd of May, 1643:

"As God hath blest us in the taking of *Redding*, so he hath in a more miraculous manner shewed his hand in prospering our Forces in the West, where 108 horse routed about 5000 horse and foote, tooke about 800 Armes, eighteen Drummes, three Colours, one Connet,⁵ and divers other weapons, and severall Prisoners. Its a pittie to relate any part of the action without the whole, its so remarkeable, which is to come forth at large in Print, onely this for the honour of him that commanded in Chiefe; Sergeant Major *Chudley*, who drew out his 108 Horse into seven Troopes, eighteen in a Troope in the Van, but thinner in the Reare, spreading a large ground and being Evening, appeared a far greater bulke than he was, and Charged the Enemy with such courage and resolution as if he had beene so many compleate Troopes, which so daunted and amazed the Enemy, that breaking through their first Regiment who casting down their Armes hastily, fled; which stricke such a terrour to the rest, that they runne away also; yet Sir *Ralph Hopton* Rallied up a considerable strength, and plaid with his Ordnance against the foote (as he thought) whereas they were onely lighted Matches, which the Foote (refusing to assist the Horse—they conceived the service so desperate) had, by direction of Sergeant Major *Chudley* left burning in the hedges and Furies in Rankes, as if so many Musqueteers had been there really placed, which kept Sir *Ralph Hopton* from approaching neere that night, onely playing with his Cannon at a distance against these lighted Matches. But just before the morning such a thundring, lightning, and storme there was, that all the *Cornish* Cavaleers being then in the open fields, were scattered, and not a man to be seene next day, which hath wrought such effect in the hearts of the *Cornish*, that hundreds are gone away, and left the service. There was taken amongst other things a Letter of the Kings, in these words (found in silke): *C.R.* Our Command is, that you use your best diligence to horse all your

⁵ A small cannon.

foot, both Musqueteers and Pikes, as Dragoons, that they march to Us with the more ease, speed, and safety, this the Rebels doe by sweeping all the Commons where they come, and We authorise you to doe as much."

Mercurius Aulicus, in dealing with this event, published a version, claiming a victory for the Royalists; but there is no doubt that this was a "lye," and that Hopton was defeated. A little later on the Royalists had their revenge at Stratton, inflicting a severe defeat on the Earl of Stamford's forces. According to their organ,⁶ the Parliamentarians lost "16 pieces of Ordnance, whereof 10 brasse, 4000 mens arms, £3000 in money, 100 barrels of powder, with a great quantity of match & bullets, 1000 men slain in the place, and most of their best Commanders either killed or taken Prisoners."

The *Intelligencer* reports in the issues of the 16th to 23rd of May, that "my Lord of *Stamford* hath received an overthrow, lost eight pieces of ordnance, 1000 armes (if not more) many Prisoners and *Chudley* taken, those that were not routed returned to *Barstable* and *Plimmoth*."

The battle of Stratton is graphically described by Gardiner.⁷ It was an ignominious defeat, and the result of this battle was that the whole of Devon, with the exception of Bideford and Barnstaple in the north, and Plymouth, Dartmouth, and Exeter in the south, fell into the hands of the Royalists.

Chudleigh, the victor of Sourton Down, deserted the Parliamentary cause and threw in his lot with the king. He attempted to persuade his father, Sir George Chudleigh, who was in command of the Parliamentarian cavalry which had been despatched to Bodmin, to follow his example; but the old man contented himself with resigning his commission, lest even a suspicion of his son's treachery should attach itself to his person.⁸

Sir Ralph Hopton marched on Exeter with a force made all the more formidable for siege purposes by the cannon captured at Stratton. The immediate capture of the city was expected, *Mercurius Aulicus*⁹ remarking that "if the old observation be of any credit, that rats & mice doe commonly forsake a ruinous and decaying house, that Citie is not like to continue long in the *Rebels* hands."

The proud and rebellious city was assaulted and captured

⁶ *Mercurius Aulicus*, May 20th, 1643.

⁷ GARDINER'S *Civil War*, i. 158-161.

⁸ *Ibid.* i. 162.

⁹ Issue of June 1st.

by the Royalist forces, under Prince Maurice, on the 4th of September, 1643, or, as another account gives it, on the 7th.

In the issue of *Mercurius Aulicus* of September 8th the following account of the fall of Exeter is given :

"And now, Reader, I must give thee a sad relation which (if you either love the *King* or His enemies) will certainly much affect thee ; which (in a word) is, that on Monday last Prince *Maurice* tooke possession of the city of *Exceter* for His Majesty. For *Biddeford*, *Appleford*, and *Barnstaple* being all delivered up to the Kings Forces, the rebellious City of *Exceter* was the chiefe place stood out in the West ; Prince *Maurice* therefore being desirous to make a short worke of the War in those parts gave a very hot assault upon the City upon Sunday last, and did not onely shake the wals in severall places, but by shooting *Granadoes* into the Towne, had fired a good part of the suburbs : the Souldiers and others in the Towne, seeing the greatnesse of their danger, desired a Parley, in which the *Prince* offered them such conditions as had beene given before to *Bristol* ; which being rejected by the Rebels (who would needes stand it out a little longer upon point of honour) His Majesties Forces pursued the assault so eagerly the next day after, that they made themselves masters of the great Sconce or Bulwark, and turned the Ordnance thereof on the Towne itselfe. Which being perceived by the Rebels and finding that there was no hope of life and safety, but in the seasonablenesse of their submission, they humbly craved to be admitted unto those conditions which before they rejected, and (above their deservings) did obtaine the same. According to which conditions the Towne and Castle were delivered to the Prince his Highnesse with all the Ordnance, Armes and Ammunition which was left therein, the City absolutely left to the gracious disposall of His Majesty, the Commanders and Officers of the Rebels dismissed in safety with their Swords by their sides and the Common Souldiers with Cudgels in their hands (which with a little *Printing* will perhaps grow to be swords next weeke) and they were suffered to take away such goods as were properly and truly theirs. And so this proud City which had so long bid defiance to their native and gracious Sovereigne was at last reduced into the power of His Sacred Majesty, and that noble and valiant gentleman Sir *John Berkley* who had deserved so much in the whole course of this service was declared governour thereof. It was observed, that when the officers and Souldiers issued out of the Towne, the Earle of *Stamford* was found missing, and no word as yet what had become of the man . . . he durst not trust himselfe unto this agreement, but privately slipt out of the Towne in some poore disguise. And so the noble, valiant, chaste Earle of *Stamford*, full of vertue and honour, crept out of *Exceter* after he had begged his

life, who not two dayes agoe told the Prince, that *not want of courage or sufficient meanes for his subsistence in the Citie, but an earnest desire to come and die in His Majesties favour had made him doe what he did.*"

A London paper, entitled *A Perfect Diurnall of the Passages in Parliament*—"collected by the same hand that formerly drew up the copy for William Cooke in *Furnivalls Inne*, and now printed by J. Okes and F. Leach, and are to be sold by Francis Coles in the *Old Baily*"—states that "after a three months siege bravely defended, and no relief come unto them, their Powder and other provisions quite spent, it was surrendered on Thursday the 7th of September, unto the Kings Forces."

Parliament must have been satisfied with the Earl of Stamford's conduct, for on the sixteenth he arrived in London, and gave "an account of the whole businesse touching the surrender of Exeter, wherein his Lordship hath so fully satisfied the Houses, that there cannot be the least conception to the prejudice of his Lordship's honour and esteem with the Parliament and Commonwealth touching that service."¹

Early in the following month Dartmouth surrendered to Prince Maurice, leaving Plymouth as the only strong place of arms in the West in the hands of the Parliament. The Royalists had not seriously disturbed Plymouth for some time, thus giving the inhabitants time to improve their fortifications and prepare for the storm which was about to break over the town.

In addition to the alarums outside the town there were dangers within. It appears that the mayor, Master Philip Francis, had discovered that Sir Alexander Carew and Master Thomas Arundell, governors of the fort and island of Plymouth, were treacherously opening up communications with the Royalists.

The *Perfect Diurnall of the Passages in Parliament* bearing the date of September 4th contains the following news touching this matter:

"The Commons also received notice from Plymouth that another of their members, namely, M. Alexander Carew, Governour of the Island near Plymouth, that commands the Sound there, was proved an Apostate, and went about to betray that Island and the Town of Plymouth into the hands of the Cornish Cavaliers, but was prevented by the fidelity of his honest souldiers, who upon the first discovery of his perfidious purpose, seized on him, and are

¹ *A Perfect Diurnal*, issue of September 14th, 1643.

about sending him up to the Parliament, to receive just punishment, according to his demerit: and lest there should be any protraction of justice here, by reason of other businesse, The good women in that Towne, upon his first apprehending (so odious was such Treachery unto them) were about to be the executioners of Justice themselves, and were very hardly intreated to forbear the hanging of him in the Island."

Carew was deprived of his membership of the House of Commons, and was eventually executed for treason on Tower Hill, December 23rd, 1644.

In *Mercurius Aulicus* of October 13th it is signified that the king's army was at Totnes, and the "Noble Colonell Digby at *Plimton* with above 3000 horse and foote, not doubting but ere long to give a very good accompt of *Plimouth*."

Early in November the besiegers began operations in earnest, laying siege to the fort at Mount Stamford, which after a desperate resistance was captured.

The news was announced in the *Diurnall* of November 15th as follows:

"The great work before the Towne, called *Mount Stamford*, is taken by the enemy, the Defendants wanting men to make it good; the losse whereof will be of great dammage by stopping of the River,² but otherwise no great prejudice to the Towne."

In the issue of November 18th further particulars are given of the loss of this fort, and the opinion is expressed that "the losse of that worke is not any wayes so considerable as was at first imagined." The reasons given are its distance from the town and the numerical weakness of the besieged, who could ill afford men for such a service. So obstinate was the defence, that on surrendering, the gallant garrison marched out of the fort with their "ordnance, arms, and all other provisions, with their colours displaied."³

Mercurius Aulicus, November 11th, announces the capture, and indulges in evident drawing of the long bow over the capture of prisoners and munitions of war.

The next issue of this paper was on the following day; and it being Sunday, the editor⁴ improves the occasion by publishing a homily on the heinous wickedness of the Crop-eares in general, and of the Earl of Stamford in particular, whom he accuses of taking "divers Turkes out of Launceston Gaole, which were committed thither for divers piracies, and

² Cattewater.

³ *Perfect Diurnall*, November 18th.

⁴ Birkenhead, Fellow of All Souls, Oxford.

listing them into the service of the pretended *Houses*; which being not sufficient to gratifie them he set a further marke of favour on them, and married some of them (before they were christened) to such maides as his wisdom thought most fit."

This is rich; but better still is the reflection as to what will be the "kinde of children these new couples will bring into the Church of England."

The capture of Mount Stamford, whilst it nerved and braced up the besieged, and prepared them for a desperate defence of the Fort and Island of Plymouth, gave also to the Cavaliers such encouragement as to warrant Prince Maurice in planning an assault, which should there and then terminate this tedious and bloody siege. Sunday, December 3rd, 1643, was the day selected. "This," says Mr. Worth,⁶ "is one of the most memorable days in the history of Plymouth. Never stood the town in such peril."

The account given of the engagement by *Mercurius Aulicus* is framed with the view of minimising the Royalist defeat; but enough is admitted to justify the announcement of the *Perfect Diurnall*⁶ that the garrison of Plymouth have behaved themselves gallantly, and given the enemy a notable repulse, and later on announcing the virtual raising of the siege.⁷

Besiegers and besieged must have suffered terribly, for the same paper states that "the wet weather had bred such a rot amongst their men (*i.e.*, the Royalists) that they died in great numbers, and some hundreds left sicke and maymed in their Trenches."

The Royalist forces were pushed back some four to six miles, and the siege became a blockade under the charge of Colonel Digby.

The besieged were in great straits for food, and their condition caused great anxiety in London, the *Diurnall* of January 1st remarking that "although freed of their besiegers, they still remain in great want of provisions and victuals, but my hopes are that the reliefe by Sea some weekes since designed thither, meeting with a faire winde are with them by this time."

On March 13th, 1644, the Parliamentary papers announce the safe and secure condition of Plymouth. The intense pressure of the siege was over, but desultory warfare continued.

⁶ *Siege of Plymouth.*

⁶ Issue of December 18th, 1643.

⁷ Issue of January 1st, 1644.

According to *Mercurius Aulicus*,⁸ however, Plymouth was reported to be more blocked up than before, there being a "new worke made, which doth more endamage all shipping coming in or going out,"⁹ the Rebels within being distressed for mills to grind, since the besiegers have deprived their water-mills of water; which perhaps was one cause why *Wardlow*¹ the Scot hath left the town; their last governour Colonell *Gold* having forsaken this world sore against his will, and their New Guardian *Martin* being as true a Rebelle as the Scot himselfe."

The garrison made frequent sorties, beating up the enemies' quarters.

"The Rebels at *Plymouth* sped somewhat better, though with more dishonour; for on Wednesday last April 17th they spied their opportunity and with most of their strength Sallied out a little way to Saint *Budocks* Church, where 160 new-raised men of Sir John *Grenvilles* (son of that famous valiant Sir *Bevil*) were scarce warme in their Quarters; and there the Rebels made no doubt but to sweep all away, coming above 700 strong (600 foot and 120 horse); but they were so shamefully repulsed by Major *Collins*, whom the Governour of *Saltash* sent with 30 Muskettiers, that they took nothing with them but 10 common Souldiers, and those they made run so fast with them into *Plymouth* that two of them for hast brake their necks by the way, not one of Sir *John's* men being killed upon the place."²

According to this paper this sally was chiefly designed to convey the impression that the garrison had gained more liberty since Prince Maurice was now in Dorsetshire.

According to Parliamentary reports the sortie was successful—forty prisoners being taken, together with twenty horses, and some ammunition.³ There is no doubt the latter account is much more reliable than the former, and that the balance of success was with the Parliamentarians.

Another sortie was made towards the end of May, the besiegers falling on the enemy at Millbrook, capturing nine cannon, 150 prisoners, 100 cows, and 300 sheep. The killed on both sides is stated to be sixteen. "Colonell *Martin*, the Governour of *Plymouth*, doth also certifie that

⁸ April 4th, 1644.

⁹ Probably Mount Batten fort; not, however, the present erection.

¹ Colonel Wardlaw invalided, for some time governor of the town. He was succeeded by Colonel Gould, who a little later on died.

² *Mercurius Aulicus*, April 23rd, 1644.

³ *Perfect Diurnall*, May 4th, 1644, p. 320.

he is in a good posture of defence, onely he desires that some further supply of provisions be sent unto him."⁴

This shows that the blockade on the land side was very effectual. The wonder is, that having command of the sea the Parliament did not completely remove the pressure of want of victuals.

The next attack on the besieging force, as recorded in the newspaper, was directed against Mount Edgcumbe House, "but were so well received by that gallant Gentleman Master *Piers Edgcombe*, that above 80 of the Rebels were killed in the place, with losse onely of one man in the House; the Rebels understanding that more aid was coming in, ran back again, taking 12 of their dead men into their boats, of whose burial they had more care than ordinary, especially one Commander, whose funerall in *Plymouth* the Rebels solemnized with three great volleys."⁵

In the sortie made in the direction of Newbridge⁶ the Cavaliers lost Captain John Arundel, and Captain John Willitiscot, and many soldiers. Sir John Digby (the Royalist leader) was badly wounded in his face. The loss of the besieged was small. The *Perfect Diurnall* of July 2nd, p. 399, accuses Sir John Digby of cruelty in barbarously murdering a prisoner of war with his own hand. *Mercurius Aulicus* of July 5th, 1644, claims a victory as usual over this affair; and, whilst deploring the loss of Arundel, remarks, "T is our constant unhappiness that the Rebels bullets must fall among gallant men, though ours must hit such as are not worth the shot and powder."

There seem to have been frequent changes in the chief command of the Island and Fort of Plymouth. Certain gentlemen of Devon and Cornwall had petitioned the House of Commons for an "Honourable Lord" to be Governor of Plymouth and chief in command of the Parliament's forces in those two counties, and a long debate ensued on this in the House on May 10th, 1644. The result of this was, that a soldier and commoner from Scotland, Colonel Carr, or Kerr, was appointed. This officer, appointed in succession to Colonel Martin, arrived in Plymouth on June 14th, "and was with very great expressions of love and joy entertained by the Garrison and whole Town."⁷

Letters from Plymouth to the House of Commons, dated

⁴ *Perfect Diurnall*, May 29th, 1644.

⁵ *Mercurius Aulicus*, May 18th.

⁶ Between Plymouth and Plympton, probably near Marsh Mills.

⁷ *Perfect Diurnall*, May 10th and June 22nd, 1644.

July 3rd, 1644, state that the town was in a very good condition, and "joyfull in their valorous new Governour Colonell Carre, that the Towne was not onely able to defend itselfe, but was sending forth three thousand horse and foote into the Field against the common enemy." Lest Parliament should think them too well off, a supply of money and shirts was demanded for the common soldiers. Meanwhile the Earl of Essex was advancing with his army into the West, and the king determined to seize the opportunity of crushing the earl before help could reach him. With foolhardy zeal Essex pushed on into Cornwall and took up a position at Lostwithiel. Here he remained inactive until the king in person, with 16,000 men, completely surrounded the army of the Parliament, who were only 10,000 in number.⁸

The inactivity of Essex in the West caused much anxiety to the Parliament, and prayers were offered up on behalf of his army. One minister at Wimpolee, in Cambridgeshire, among other expressions had this in his prayer: "O Lord we beseech thee blesse thy servant Sir William Waller, and in thy due time be pleased to quicken that dull man the Earle of Essex."⁹

The Parliamentary horse, under the command of Sir William Balfour, managed to evade the investment, and rode on to Plymouth, but the infantry surrendered. Essex had previously escaped with Lord Robartes and Sir John Meyrick in a small vessel to Plymouth.¹

During this period Plymouth was freed from annoyance, and the positions around the town, so long occupied by the Cavaliers, were again in possession of the garrison.

By an order of the House of Commons, of September 11th, Lord Robartes was appointed Governor of Plymouth.

Early in September the king was at Tavistock, and later at Widey, near Plymouth. On the 10th of that month Charles sent a summons to the town of Plymouth to this effect: "That God had given him a victory over the Rebels; that his desire ever was to reduce his people by Acts of Grace and favour and is desirous to put a speciall marke of favour upon that Towne of Plymouth, and doth therefore require them to surrender up the Town unto him, and they shall enjoy all their wonted Priviledges, and upon the word of a King" [which was broken in not keeping the Petition of

⁸ GARDINER'S *Civil War*, i. 463.

⁹ *Mercurius Aulicus*, July 11th, 1644.

¹ GARDINER'S *Civil War*, i. 468.

Right] "they should have no other Garrison put upon them ; but what they had in the most peaceable time." ²

Lord Digby tried hard to detach Lord Robartes from his loyalty to the town and Parliament, but without effect.

"But these specious Invitations prevailed nothing with the honoured Lord *Roberts*, and the Gallant spirits of *Plymouth*, who to testifie their defiance to the besieging Enemy, they all of them presently shut up their shops in the Towne, and unanimously betooke themselves to the workes resolving to stand it out to the last, which the insulting Enemy perceiving the same day with great fury endeavoured to storne the West-end of the Towne, but were bravely repulst with losse ; In which action the Sea-men that were in the Garrison must not be forgotten, but deserve much praise for their forwardnesse to doe service, if the Enemy had come on all sides by land."

Plymouth was too tough a nut for the king to crack, and after this futile attempt to capture the town, Sir Richard Grenville and his Cornishmen were left to maintain a blockade, and Charles with his army marched eastward.

"We cannot give you full satisfaction that this Towne is soe happy as to have noe Enemy neere unto it, for wee understand that although the Cornish sons of Beliall do decline the conducting of his Majesty to *Oxford*, yet as cosens to the most ignorant Welchmen they love a more firtell soyle than their native Country, and therefore as yet doe suck the honey Combs about *Plympton* and other places neere *Plymouth*, and are some impediment in stoping provision from comming thither by land." ³

Sir Richard Grenville, commonly known amongst the Roundheads as Skellum Grenville, had a young kinsman of the same name, who, according to one report, was taken prisoner by the Plymouth garrison, and hung by Lord Robartes at one of the town gates. The other version is very different, as the following quotation, taken from the *Perfect Diurnall*, September 30th to October 7th, 1644, clearly shows :

"From Plymouth it was certified that one Greenville (a kinsman of Sir Richard Greenville) endeavoured to betray the Towne for a large reward of money from the said Sir Richard, which had such opparation on his perfidious mind that had not his Treachery bin timely discovered in all probabilities the designe might have proved fatal to the place, but it pleased God to discover the Plot, and so the Instrument was condemned and executed."

² *Perfect Diurnall*, September 16th, 1644.

³ *Ibid.* September 23rd to 30th, 1644.

It is most probable that this contemporary account is the more correct.

There is very little news of Plymouth or the West in the newspapers published during the last three months of 1644. The land blockade of Plymouth was continued, but as the port was open supplies of all kinds were sent in by sea. Exchanges of prisoners were frequent. An attempt was made by the Parliamentarians to exchange Sir Alexander Denton for Sir John Northcote. Sir Alexander was sent to the king's quarters, but he had to return, "for that the King would not condescend to exchange him for Sir John Northcot."⁴

It was at this period that Sir Alexander Carew suffered for his treachery, the announcement in the *Perfect Diurnall* of December 23rd to 30th, 1644, running as follows: "Sir *Alexander Carew* Barronet, condemned by the Court Martiall for endeavouring to betray *S^t Nicholas Island* by *Plymouth*, had his head cut off this day (Dec. 23) on Tower Hill."

If the town was quiet during this period, it was lively enough as soon as 1645 commenced, for many references to Plymouth are contained in the early issues of the new year's papers. On January 10th Grenville delivered a grand assault on the town. The following account is taken from the *Perfect Diurnall*, January 13-20th, 1645.

January 15th.—"From the West we had Intelligence by Letters this day of a desperat assault by Skellum *Grenvilles* Forces on Friday night last against *Plymouth*, and that the Enemy had possessed themselves of two or three of the outworkes, and turned the Ordinance against the Towne, yet such was the courage and gallant resolution of the Garison, they left not untill they had beate the Enemy out againe, and cut off many of them, the particulars are not yet come."

January 16th.—"You heard in the former part of this intelligence of the good service of the garison of *Plymouth* against *Greenviles* forces, but this day wee had more certaine Intelligence thereof by an expresse from the Lord *Roberts* governor of *Plymouth* to the Speaker of the house of Commons, signifying, that on the 10th of January, *Greenville* Alarm'd the Workes about the Towne in foure severall places, and after a very hot dispute, the Enemy became Masters of one greate worke, but were beaten off from the three other Workes with great losse, leaving 75 of their dead men on the place, and at least foure times as many more slaine in the service, besides many hundreds wounded. As soon as they were beaten off the three Workes, the *Plymouth* men who behav'd themselves with extraordinary gallantry environed the fourth

⁴ *Perfect Diurnall*, November 18th to 25th, 1644.

worke and the Enemy therein, who presently surrendered upon Quarter. There were many Prisoners taken and much Armes, but the list is not yet come, nor what persons of note were slaine. The Victory was great and the Enemy much discouraged. To God be all the glory."

Letters were also received from Justinian Peard, the Mayor of Plymouth, informing the House of their condition and extremities, "being blocked up by a Tyrannicall Enemy, and yet that their men were very valiant and full of courage, desiring that care might be taken for more monyes, provision of victualls, Armes and Ammunition, and they doubted not to remove the Enemy to a further distance in a short time." This was backed up by a petition to the House of Commons from the Lord Mayor, Aldermen, and Common Councilmen of the City of London, "wherein they desire the house to use all dilligence for the safeguard of the Towne of *Plymouth*, in regard it is a Towne of that concernment for Trading into the West, and that the Inhabitants are poore, having bin almost two yeares besieged, and in their petition do offer some wayes for provisions for the same."⁵

As an illustration of the violent character of Sir Richard Grenville, the next entry in the same paper, dated January 28th, is significant. "From the West we had also the news that *Skellum Greenville* had upon a discontent Pistolled Colonell *Champernoone* and his Brother, both of his owne party."

The *Perfect Diurnall*, February 17th to March 3rd, 1645, contains the following news:

"By letters from the West we have intelligence, that *Skellum Greenville* playes hard against Plymouth, and hath againe ventured to storne the Towne, and was beaten off with much losse; the particulars are not yet certified, nor are there any Letters thereof come to the Parliament that I heare of. . . . We had also further Intelligence by letters that Capt. *Swanley* had againe relieved *Plymouth* by Sea, and had landed some foote Souldiers there, who joyning with the Garison thereof, on Tuesday the 18th of *February*, were drawne forth against the Enemy, who the night before had gained the Hill where the Worke stood, called *Mount Stanford*, which was formerly slighted by us. Upon this Hill the enemy were raising a very formidable Worke, which would have much annoyed the town, but our men with much galantry unexpectedly set upon them, beat them from their new Worke, and at length quite out of the Field, and pursued them above a mile, took 104 Officers and Common Souldiers, whereof a Lieutenant Colonell, a Major, 4 Captaines, 4 Lieutenants, 2 Ensignes, the rest inferior Officers, and

⁵ *Perfect Diurnall*, January 25th, 1645.

Common Souldiers. There were also taken about 300 Armes, and in the Worke good store of Mattockes, Shovels, and Faggots. On our side we lost but one man slaine and some wounded, how many the enemy lost is not certaine."

For some time the blockade of Plymouth dragged fitfully on. Grenville had proceeded to the siege of Taunton, where he was wounded, receiving a bullet in the groin.

Lord Robartes retiring from the chief command at Plymouth, the House of Commons ordered that the military government of the town should be vested in a committee of five—principal men of the town and county—and that Col. Kerr have supreme command.⁶ An Ordinance was read in the House of Commons, appointing Captain Batten governor of Battens Tower and Battens Mount, near Plymouth, "and after debating thereof it was committed to a Committee."⁷

On December 13th it is announced that Colonel Welden be appointed Governor of Plymouth, but notwithstanding this Colonel Kerr remained in command for some time.

General Digby, who was blockading the town, attempted to bribe Kerr to deliver up the fort and island, but the Parliamentarian was staunch, and was rewarded with a gift of £500. The House of Commons recommended him to the Committee of the Army for some place befitting a man of such approved faith and integrity.⁸

The long protracted siege was now drawing to a close. The last important action is thus described in a letter written from Plymouth on December 27th, 1645, and published in the issue of the *Perfect Diurnall* for January 10th, 1646:

"Right Worthy,

This day (viz., 27th of December) our men after a small dispute took Canterbury⁹ worke, and in it 17 prisoners, and afterwards marched to Saint Budeaux where after an hot skirmish of an houre and halfe our men took the Church-yard, which was fortified, and the Church, and in it 92 prisoners, amongst which, one Major Stukey of Horse, Major Sall, Captaine Price, Captaine Edmonds, Capt. Lapp, and Capt. Baker, 3 Lieutenants, 3 Ensignes, 8 Sergeants, 55 Horse, 2 barrels of Powder, and 100 men's armes, besides the armes taken in Canterbury worke with Match and Bullet proportionable, there were 10 of the Enemy slaine, and 7 of ours, whereof Major Heynes was one, and about 20 more of our men wounded, thus the Lord is pleased to shew favour to us; that wee may bee truely thankfull is the hearty prayer of your Servant.

"Plymouth, December 27, 1645."

⁶ *Perfect Diurnall*, May 9th, 1645.

⁸ *Ibid.* January 1st, 1646.

⁷ *Ibid.* September 2nd, 1645.

⁹ Kinterbury.

The advance of Sir Thomas Fairfax raised the siege. The Parliamentary general reached Totnes on January 12th, and immediately despatched a force towards Plymouth.

“But the enemy in Plympton hearing of their advance in great haste left all their works before Plymouth, and fled into Cornwall, whither also the Prince, Hopton, and Greenville, with their scattered forces, are all fled in great distraction, and ours in the pursuit of them, wee have likewise taken all the enemys works at Plympton and therein 7 peeces of Ordnance, 4 or 6 Barrels of Powder, with other provision and Armes, which the Enemy being in such haste left behind them, and many prisoners. By this meanes Plymouth is once again set at liberty.”¹

The surrender of Mount Edgcumbe House is announced on the 9th of March, and of Ince House on the 28th of the same month.

“The last week the Governor of Plymouth summoned Ince House belonging to one Killagrew (wherein the Enemy had a Garrison) they desired that they would return an answer the next day, but being pressed thereunto, returned a scornfull answer, whereupon 60 Musqueteers being sent to keep them in, and sixtie more to follow with a Demy-Culverin, upon the landing of the first they begged Quarter for their lives, there was in it sixe barrels of powder, foure Minions, and ninetie Muskets.”²

This was the last fortified post held by the Royalists in the neighbourhood of Plymouth.

¹ *Perfect Diurnall*, January 17th, 1646.

² *Ibid.* March 28th, 1646.

AN OLD PARISH CHEST.

BY MRS. GRACE JOHNSTONE.

(Read at Tavistock, July, 1889.)

THE *Gentleman's Magazine* for February, 1831, contains an interesting account of the institutions and antiquities of Tavistock by Mr. Alfred John Kempe, F.S.A., brother of the famous Mrs. Bray, the writer of a goodly row of historical romances after the manner of Scott, and the friend and correspondent of Southey. Mrs. Bray was *en premières nocces* wife of Charles Stothard, the young antiquary who made the celebrated copy of the Bayeux Tapestry in 1818, and who died three years after in a tragic manner in the church of Beer Ferrers, near the mouth of the Tavy. About this memorable period of her life his widow made the acquaintance of Mr. Bray, the erudite vicar of Tavistock, whom she took for her second husband, and whom she survived for a quarter of a century, although his death did not take place till 1857. It is not given to many women, authors though they may be, to write epitaphs to two husbands on the walls of the churches of two adjacent parishes; but Mrs. Bray was no ordinary person, either in the outward circumstances of her life or in her personality, as the stories still extant concerning her among the older inhabitants of Tavistock abundantly testify. Great changes took place during her residence there, the little town being remodelled and almost rebuilt by the reigning Dukes of Bedford, John and Francis, while the fine Perpendicular church was restored at great cost by public subscription in 1844-6. It was one of the earliest ecclesiastical buildings to suffer this process in the West of England, and, like other pioneers, it paid a heavy penalty for being in advance of its age. Mr. Kempe describes the unique

paintings of saints and heavenly powers on wood which it possessed at the time of his visit—no doubt remains of the rood-screen, which is known to have existed in its entirety as late as the year 1562; but the "restoration" of 1844 made a clean sweep of these things, improving them off the face of the earth, so far as subsequent inquirers have been able to discover. The interior of the building was almost as completely gutted as if a fire had burnt it out; and beyond the two monuments to the families of Fitz and Glanville, which owed their preservation to the fact of being carved in stone and considerably massive, not an article of interest was allowed to remain, save a carved black oak erection, irreverently likened by certain scoffers to an old hall table, but stated by the more piously-minded to have been one of the original communion tables set up at the Reformation, and which still occupies the place of honour under the east window. The chancel, or, to speak more correctly in the language of the period, "the communion rails," for no attempt was made to preserve the old plan of an enclosed chancel and side-chapels in the chancel aisles, was adorned in approved Gothic taste, with crocketed tablets setting forth the Lord's Prayer and the Ten Commandments in the vulgar tongue; and the rest of the large sum collected was spent in thick and uniform rows of uncomfortable oak seats with handsome carved ends. A pretty organ screen in wood adorned with statuettes, and a stone pulpit of elegant design, exhibiting, however, the meaningless niches without figures so dear to the primitive race of restorers, are about the only things of beauty which atone in the slightest degree for the drastic destruction of all articles of historic interest. But the church, with its lengthy nave and aisles (there is an extra south aisle extending as far as the commencement of the chancel aisles proper) and beautifully-pierced tower-arch, disclosing the perfectly-proportioned west window, is too handsome and stately to be entirely marred by the treatment to which it was subjected, and few Devonians, and certainly no native of Tavistock, can gaze on it without a feeling of pride and delight in its possession.

The situation of the town, and the view of the lovely river, bounded by the walls of the once famous Benedictine Abbey, as you enter it, are picturesque beyond description, and the words of no guide book or tourist's record can possibly do them justice.

Here, however, we are chiefly concerned with one brand snatched as it were from the burning, which in an almost

miraculous manner has lately found its way back into the parish church.

Mr. Kempe refers in his above-mentioned paper to certain parish documents which had come under his notice, and gives several extracts from them. At the time of the restoration of the church they were enclosed in an old oaken chest, in which probably they had always been kept; and providentially for their safety the box was transferred to the Grammar School, where an antiquarian head master, perhaps the same who was mentioned by Mr. Kempe in 1831 as having only two scholars under his care, cherished a design of employing part of his ample leisure in deciphering them. Felix-like, he appears to have put off the execution of this design to a more convenient season; and in the course of time the box was given back into the custody of one of the wardens of the church, who had it placed in an upper room on his business premises, where it remained neglected and forgotten until his death in 1885. Since then a thorough investigation of its contents has been instituted; and through the labours of Mr. R. N. Worth, who has, at the expense of the Duke of Bedford, collated and printed the documents in a small volume called *Tavistock Records*, many interesting particulars have come to light.

The chest, a very ancient iron-bound box, about 4ft. 6in. in length by 18in. broad, made of rough-hewn planks, is now to be seen under one of the windows of the north chancel aisle, while the most interesting seals and documents which it contained are displayed under glass a few paces distant. The gem of the whole collection, a warden's roll of the date of 1385-6, and believed to be the oldest church-warden's roll in existence, has lately been mounted and framed, and hung immediately above the glass case before mentioned. This roll, which is entirely in Latin, is written on a strip of parchment some 25 inches long by 10 inches broad. This parchment has naturally become very brown from age, but the ink marks are still distinctly legible, and the characters are firm and well formed in the upright fashion of the middle ages. Mr. Kempe, who saw this roll, did not fail to notice the mark of the notary at the bottom, "a head with an extraordinary long nose (perhaps this was intended for his own portrait) having a quill stuck in the forehead by way of plume."

The record is headed, "Account of Reginald Strepa, warden of the light of the blessed Eustachius of Tavistock, from the feast of the Invention of the Holy Cross in the

year of the Lord 1385 to the same feast in the next following 1386." Further down there is a reference to pence (£4 7s. 6d.), received of Thomas Leye, warden in the year preceding. This surname without the final *e* is still quite a familiar one in the district. The entries contained in the roll come under the head of arrears, rents, and pence on the credit side; and the buying of wax and tallow for lights, the keeping and repairing of the church, and offering pence to the various altars, on the debit side. The keeping and repairing of the church includes some curious items. "To rushes gathered against the feast of the Nativity of St. John Baptist *iiij^d*. To bokeram bought for the repair of the vestments *i^d*;" for the labour thereon, *vj^d*, and the same amount for washing them. There are also several items for repairing glass windows, and for the purchase of many feet of glass. "To making three figures in the vestry window *xij^d*. To divers expenses about making divers windows in meat and drink *vj^d*; to drink at making the windows *iiij^d*." The memorandum of the treasure of the church comprises "one cup and cover of silver, with two gilt angels holding a glass receptacle wherein the body of our Lord is borne [this was the vessel in which the host hung over the altar]; four silver chalices and patens; two silver cruets; one silver pix for the body of Christ."

Many other churchwardens' rolls were found in the box, eight following on the first one in almost quick succession, then an interval from 1426 to 1470, then twelve rolls of the sixteenth century, several of them of great interest, and as many more accounts in the seventeenth and early part of the eighteenth centuries. After the sixteenth century the accounts are given on folded sheets instead of rolls. Repairs done to bells and cords are mentioned in some of the earliest rolls. In 1425 and some following rolls there are entries of payments for fuel burnt in the cemetery of the church, on the vigil of the Assumption of the Virgin, and further payments for rushes for the feast of St. John Baptist. By 1471 the treasure of the church, as recorded in that year, had received the following additions: "One beryl set in silver, and with a chain of silver to hang the aforesaid to the pix with the body of Christ on the principal feasts. One cross of silver-gilt with the figures of St. Mary the Virgin and St. John the Evangelist to the same belonging. One box, in which the hair of St. Mary the Virgin and St. Mary Magdalene are contained. One cup of silver. One little cross, the legacy of John the Hermit. One censer of silver."

In 1538 there is a payment of "v^d for makyng clene of the glasse in the churche ayenst Ester." (Even this sum does not appear to have been always forthcoming for the purpose during the last fifteen years of grace!) A great many repairs were carried out in that year; and another inventory follows, which shows that further additions to the treasure had been made since 1471 of "two silver candlesticks; a pax with a crucifixion and figures of the Blessed Mary and St. John the Evangelist, the gift of John Sawell; a beryl, the gift of John Sampson; a pix of silver, for bearing the body of our Lord to the sick; two censers of silver, one being the gift of Richard Cade; a ship of silver; a great cross of silver-gilt, with a crucifixion and the figures of the Blessed Mary and St. John the Evangelist; and a chalice, the gift of Alice Cade, in use at the altar where daily mass is celebrated."

The debit side of the accounts now begins to be given in English. Mention is made in 1539. of £5 6s. 8d. "paide to the Kynges visitours for thre Tabernacles, the pament stones of the Church, and for dexis and chandelers." There is an ominous sound about this, for just at the same period some of "the kynges visitours" (perhaps the same) were busy in suppressing the adjacent monastery, and no doubt in rifling its beautiful church, said to have been 350 feet in length, which stood in immediate proximity to the parochial one. Items for repairs to clock, cheyme, and argons appear from time to time; and also (in 1539) 7s. 6d. "paide to M^r Meye for the exchange of a Cope in the Abbey;" and, in 1540, 5s. 4d. paid to the "Kyngs collector for the ij^d paym^t of the Kyngs subside for the Church lands;" and a payment of rent (2s. 6d.) to "my lord Russells bayly," marks the first mention of the noble house of Bedford in the churchwardens' rolls.¹ There are a great many entries for payments in the year 1555, the increased expenses being due, says Mr. Worth, to the restoration of the Roman Ritual on the accession of Mary. "Itm payed for waxe for the church this yere at dyu'se tymes and for makyng of the same xxvij^s x^d. Itm more for iiij^d of sope to washe the church clothes ij^s. Payed for franke sens iiij^d;" also payments for the making of an "albe and rocchetts," for mending "the crosse;" with 4d. to "Alse Smale for makyng clene of to greate Candellstyckes," 14s. for "a Masse Boke," and various

¹ The names of John Russell and Sabine his wife occur in the rolls of 1425 and 1470, among those whose anniversaries were observed in the church, and they may have been connections of the Dorsetshire family.

items for the repair of the rood, cross, the chancel door, and the like.

In 1561 we find payment "for a payre of glouys for Mr Vicar," 15s. "for a paraffres of erasmus" (still existing), 4s. for the washing of five surplices and one communion cloth. There is also a curious entry of "Itm payed unto the quenes maiesty is players xiiij^s iiij^d. Itm payed for the exchaunge of the same moneye x^d. Itm more spent uppon the same players x^d." But the inventory of the church goods in 1561 shows a lamentable falling off. All the silver seems gone except two chalices. The other articles enumerated are of a far less valuable nature—white and yellow silk vestments for deacon and sub-deacon, a white satin cope, and some table-cloths of velvet and linen "for the comynyon table." We may here remark that there are no silver vessels now belonging to the church of an earlier date than 1624.

From this time forward the payments are of a far more mundane character—10s. and other sums for "kyllyng of ffoxes," 6s. 3d. for "my lord bysshopes sr^{vnts} dynner at his being here," numerous payments to individuals for "whippynge dogs out of churche," for "settyng up of five new seiges in the Chaunsell" and other "seiges" in the church about £4 (this in 1573).

The bells and "cheame" seem to have undergone great repairs in 1574, a process repeated at a large cost just about three hundred years later.

The seventeenth-century accounts are very fragmentary, especially after 1629. In that year there are several entries of payments in connection with the communion expenses—for wine, £9 8s.; for bread, 8s. 8d.; and 1s. 6d. "for keepinge cleane of the Comunon pots;" also of 3s. "paid the Ringers that did ringe at the Comynge of my Lord Bishopp;" and "for a pottle of burnt sacke to bestowe uppon my Lord Bishopp iiij^s."

In 1684–85 (accession of James II.) ecclesiastical matters appear to have pulled themselves together again. The "Deane ruler" came to view the church on October 2nd, and 1s. was paid to the man who accompanied him. The sacrament required eleven quarts of wine in May, eight quarts at Michaelmas, twelve at Christmas, and at the following Easter thirty-six quarts—a truly enormous quantity!—while "the bread for the Sacrament in the hole year" only cost 1s.²

² The probable explanation is that all the wine was not consecrated, but was distributed to sick people as required. In many country parishes the custom of buying wine for this purpose out of moneys collected at "the sacrament" was continued up to a very few years ago.

A new church Bible was bought, and 3s. paid for "the two tables & mending the seates in the church," and over £3 to the clerk for his wages, and washing and keeping "the Lining," plate, and bells.

From a churchwardens' book, 1655-1714, several noteworthy particulars may be gathered. Not the least important entries are those of the "Briefes collected in our Parish;" nearly a hundred in number between 1660 and 1681, including a great collection in 1670, and another smaller in 1680 "towards the redemption of the p'sent captives now in Turkey," the first realizing £16 0s. 9½d. from 730 contributors. The other collections were for all sorts of purposes, some individual and local, but many more for public objects in various parts of England and even abroad. An example of each kind may be given:

"Collected the 29th of Aprill, 1662, for & towards the expence & charge of one Eliseus Cruse of this place in travelling to London to bee touched by the Kings Ma^{ty} for the Kings Evill, £2:6:3..

"Sept 16, 1666 for the present poore distressed people of the toun & University of Cambridge, £4:11:6.

"December 1681, general collection in toun & parish for the present subsistence & relief of the distressed Protestants of France, £6:12:3½d."

It is satisfactory to note that Tavistock maintains its character as a very charitable place, considering the means of its inhabitants, and that the application of the monies collected in it has not the least fallen off in breadth of sympathy. It may interest the curious in etymological matters to know that petitions for help brought round by distressed persons who have lost a pig or a pony, or who stand in need of an elastic stocking, are still called "briefs."

Most of the deeds, leases, and miscellaneous documents are of purely local importance. One of the earlier dated ones (1325) is the lease of a house to Reginald of Eggecombe, clerk, from certain wardens and brethren of the light of St. Mary, in the parish church of Tavystoke, with the other brethren and sistren of the said fraternity. The names of the places mentioned in them can be easily identified in most cases, and, like the churchwardens' accounts, they are extremely interesting from the family names they contain. Among the many which are still of more or less importance in the district, may be cited those of Collings, Escott, Chubb, Gaude, Kerswill, Prout, Gill, Cornish, Glubb, Rundle, Cudlip,

Sleeman, Horsewill, Willesford, Doidge, and Spry, which appear over and over again in slightly varied forms.

Perhaps the most amusing relic in the whole collection is the fragment of articles against Jasper Cann, vicar of Tavistock in 1682, who was charged among other offences with having refused to celebrate the Holy Communion, "for noe other reason as thou saydst because thou wouldst not weare a mended surplice, and that the wyne provided was unwholesome, because not bought where thou wouldst have had it." He was also denounced for taking a flagon of consecrated wine to his own house, for misappropriating the offertory money, for selling the sacraments, and for contempt of the ordinary to the point of having declared to the parishioners assembled in the chancel that he did not care a rush for the Bishop. This worthy was further accused of having disguised himself as a Nonconformist, and begged a guinea from a lady of that party at Bristol. The parishioners do not appear to have got much by their action, as Cann held the living till 1690.

Seals are still attached to a few of the documents, their ages varying from 1330-1542. In colour they are a good deal browner than the parchments to which they are appended. The most rare and curious is a rush-ring seal (or stipula) of a lease in 1460. The plaited rush looks like a miniature crown of thorns stuck on to the wax.

Much attention has lately been drawn to scholastic matters in Tavistock in consequence of the closing of the Grammar School. A good deal of obscurity attaches to the foundation of this institution, which rose to great eminence under the last head-master, the Rev. E. Spencer. It is certain that the churchwardens' accounts point to the existence and maintenance of an ancient school in Tavistock, for from the middle of the sixteenth-century downwards we meet with payments for repairs done to the "Schole howse," and for the schoolmaster's accommodation. In 1554, Peter Smyth, scole maister, is witness to a lease in connection with another famous foundation, "The Spytle howse called the Mawdelene" afterwards merged into the old workhouse in Ford Street. In 1573 we find, "Itm paide the vycar for teachyng the scholars this year x^{li}. Itm paide to Will^m Shere for teachyng the littl chyl dren this year iij^{li}." In 1588 is the entry, "Itm paid John Drake the schole maister for teachinge in the Grammer Scole this yere xij^{li}," and £4 again for the teaching of the little children; also 9^d for a chain for the dictionary in the school-house. There can be little doubt

that provision had been made from the earliest historical times for the education of the youth of Tavistock by the authorities of the Abbey, and the Saxon School mentioned by Archbishop Parker was directly connected with that foundation. It is inconceivable that on the suppression of the monastery, the teaching-work which it had carried on should have been allowed entirely to drop, and it is more than probable that the church authorities stepped into the breach, and made the best arrangement they could for the continuance of a school for the benefit of the inhabitants. The items in the churchwardens' accounts show that much more was expended in charity, and for secular purposes, after the Reformation than before it. This points to the fact that the church was practically the only authority to appeal to for any public support for educational or eleemosynary objects many years after the suppression of the Abbey.

The extracts given above comprise those of greatest interest to the general reader; but the whole collection is full of significance to an antiquary, and would be of the utmost value in the compilation of a local history. Many traditions remain in the district, although they are gradually fading away, and disappearing with other relics of the past. In addition to the time-honoured Grammar School, the ancient tree known as Lady Howard's Oak, which for generations had spread its branches over the river, has been swept away during the past year; while the last of the octogenarian ladies, to whom the visits of the French officers from Dartmoor Prison to Tavistock parties on parole, and the storms and snows of the winter of the Retreat from Moscow were vivid recollections, has been borne to her well-earned rest.

POSTSCRIPT.

As an illustration of the old adage, that "it never rains but it pours," it may be mentioned that about the same time that the chest of parish records was re-discovered, a vestry book came to light containing many interesting entries made during the 18th century. The fly-leaf now bears the following inscription: "This vestry book by some means having got into private hands was recovered by me, D. P. Alford, vicar of Tavistock, November 17th, 1885." The entries begin on February 20th, 1733-34, and end on August 22nd, 1802. The majority of the vestry orders given are for the relief of the poor in clothes and money, and for their maintenance in the workhouse. "Beef for the parish" is quoted several

times about the middle of the century at an average of 2d. per lb. The parishioners assembled in vestry appear to have exercised a sort of equitable jurisdiction over the manners and morals of the borough, various disorderly persons from time to time being directed to be prosecuted or "torned" out of the parish, and other unsatisfactory and immoral characters committed to Bridewell. In 1759 we read, "The Milita (*sic*) men of the Town and parish of Tavistock are to have green serge waistcoats lind with white and Russea sheeting for spatterdashes, the spatterdashes to be blacked and to be paid for by the parish of Tavistock." In 1784 the vestry ordered the purchase of various musical instruments (enumerated by name), and that Mr. Bennett, of the parish of Coombanting, be appointed music master. There are also elaborate rules and orders for a Sunday-school in 1789. The names of several women are entered as present at a large vestry meeting in 1797. Towards the end of the century the public distress evidently became severe, and special subscription lists for the relief of the poor are ordered. In obedience to a letter from Lord Fortescue, the Lord-Lieutenant, in the spring of 1799, two young men were chosen by the vestry as guides, *i.e.*, as members of a corps "to prevent confusion in case of invasion," and to "perform the services of the old dragoons." Many other interesting particulars might be cited from this book, and it is also valuable as a record of old names among the poor of Tavistock. Few of these have apparently died out. Among one curious surname is that of Tramplesure, which, although not still borne by any inhabitant of the parish, has been introduced into the works of at least one famous local novelist in our own times.

ON THE AGE OF THE GRANITES OF DARTMOOR AND THE ENGLISH CHANNEL.

BY ARTHUR R. HUNT, M.A., F.L.S., F.G.S.

(Read at Tavistock, August, 1889.)

(*"Cum grano salis."*)

SOME explanation of my venturing on a paper with the above title is due to the members of this Association, who may well exclaim, "The age of the Dartmoor Granite has been defined since the days of De la Beche and Godwin-Austen; why then re-open such a fundamental question, and one so long since settled?"

My excuse must be that ten years ago I became involved in the question of the submarine geology of the Channel, and the age of the Channel granites; and that five years ago I bought a farm on the borders of Dartmoor, and have ever since been ploughing up problems and raking up doubts that I would fain see solved and settled by those competent for the task.

Ten years ago, as now, it was confidently believed that the Dartmoor granites were of post-Carboniferous age, or at earliest inter-Carboniferous; and it was thought highly probable that a continuation of the Dartmoor mass passed beneath Devonian rocks on the south coast of Devon, which rocks we were supposed to see baked into the schists of the Bolt and Prawle district.¹ It was further thought likely that this extension of the Dartmoor Granite, might reappear under the waters of the English Channel, and this surmise seemed to be fully justified when I was able to show that granitoid rocks were constantly being trawled by the Brixham fishermen just exactly where geologists had expected them to occur. However, when rocks in great variety came trooping in from the Channel—including in their number granites, both typical

¹ *Trans. Devon Assoc.* xi. 842.

and hornblendic; gneisses, both typical and hornblendic; and various eruptive rocks, such as diorites, diabases, and gabbros; with last, but by no means least, a specimen of a conglomeratic grit, thought by some to be of pre-Cambrian age—many of these rocks struck the theory of a Dartmoor extension into the Channel area a somewhat staggering blow. It now seemed so very likely that we had in the English Channel an area of pre-Devonian crystalline rocks, which certainly could not have had any hand in metamorphosing, by means of heat, the Bolt and Prawle schists, supposing the latter to be of Upper² Devonian age. On the other hand, as there were at least two distinct varieties of granite represented among the trawled blocks, there was just a possibility that there might still be some post-Devonian granites among the number.

- During the course of my enquiry into the submarine geology of the Channel, a great change of opinion took place as to the age of the rocks of the Lizard Peninsula, and of the Prawle district. In 1879 both these districts were held to be of Devonian age; but in 1882 Professor Bonney claimed the Lizard Rocks as Archæan,³ and in 1884 put in a similar claim for the Devonshire mica-schists.⁴ The rocks of the Channel Islands and Brittany have also in the meantime been carefully studied both by Professor Bonney and the Rev. E. Hill, with the result that both these authors claim an Archæan age for parts of both Brittany and the Channel Islands.⁵

The researches of these geologists add greatly to the probability that some at least of the blocks of crystalline rocks trawled by the Brixham fishermen are not only of Archæan age themselves, but represent an area of Archæan rocks in the English Channel off the coast of South Devon; for if there are Archæan granites in Brittany and the Channel Islands, there is clearly no improbability that rocks of similar age may be concealed by the waters of the Channel.

The theory that the birth of the Dartmoor and Channel granites, and the metamorphosis of the intermediate sedimentary rocks by the baking process, all took place at the same epoch, and that epoch post-Carboniferous, was commendable for its simplicity. The theory that there are upwards of 130,000 acres⁶ of post-Carboniferous granite exposed in

² *Trans. Devon Assoc.* xi. 325.

³ *Quar. Journ. Geol. Soc.* xxxix. 1.

⁴ *Ibid.* xl. 23.

⁵ *Quar. Journ. Geol. Soc.* xliii. 819, 385.

⁶ *Rowe's Perambulation of Dartmoor*, p. 2.

mid-Devon, and an undefined and perhaps greater mass of Archæan granites and gneisses underlying the waters of the Channel some thirty miles or so to the southward, has not the merit of equal simplicity. It makes one feel inclined to scrutinize somewhat closely the evidence which has led geologists to such a confident belief in the mediæval age of the Dartmoor Granite.

During my investigation of the Channel granites I became extremely interested in the question of the fluid enclosures and bubbles so often found in plutonic and eruptive rocks. One of my Channel slides, No. 19, was particularly noticeable in this respect, as among many fluid enclosures it contained a couple so related in position that when viewed with a one-sixteenth objective the pair were equally in focus, and the bubble in each could be made to pass simultaneously from side to side at will, with a slight application of heat.

It was not till the spring of the present year, 1889, that I took the trouble to examine any of the Dartmoor rocks, and then it was with no intention of meddling with the question of their age. One of the distinguishing features of the Channel rocks was the entire absence of tourmaline, a mineral so very abundant in Dartmoor, and I thought it would be convenient to possess a very good specimen of sliced tourmaline for reference and comparison. I accordingly sent a fragment of an injected vein, dividing the slates and granite at Water Rock,⁷ opposite Lustleigh Cleave, to Mr. F. C. Cuttell for preparation. This vein had always appeared to me the *beau idéal* of a specimen of minute independent tourmaline crystals suitable for the microscope. On examining the slide I was delighted with the tourmalines for their own sakes; but when I attacked the section with the one-sixteenth immersion objective, I was astonished to find the quartz crowded with fluid cavities containing cubic crystals, presumably salt. I at once followed up the clue, and had eight more slides prepared of Dartmoor granites and veins: viz., Lustleigh Cleave granite, and intrusive vein; Heytor granite, and tourmaline vein; vein from Hamel Down; vein near Foxworthy; "white luxulyanite," given me by Mr. Worth;⁸ and granite concretion near Foxworthy. These eight, together with the Water Rock slide, and an old slide of the Granite and Culm junction near Bovey, made a total of ten sections for examination as to the question of included chloride of sodium.

An examination of these ten slides proved that each one

⁷ So called in one-inch map; not named in the new six-inch.

⁸ From Lee Moor.

contained fluid enclosures with cubic crystals.* Thus we find that whereas no included crystals were recorded in the analyses of the thirty-two crystalline rocks published in my notes on the submarine geology of the Channel, the first ten specimens collected haphazard in the Dartmoor granitic area contain them without a single exception.

The included cubes of salt occur in four distinct kinds of rock; viz., in the characteristic grey granite of Heytor, with its large felspar crystals; in the quartz-and-tourmaline veins of the same locality; in the red infiltrated veins of quartz, tourmaline, and felspar which run east and west across the valley of the Bovey; and in the injected veins which abound in the granite, and have, so far as I know, no definite direction.

A slice of Heytor granite, and another from a large compact block near the east gate of Lustleigh Cleave, contain the cubic crystals, but not abundantly. Injected veins from near Bovey, from Water Rock, and from Lustleigh Cleave also contain them, and the last-mentioned in great abundance. Veins from Neadon Cleave and Hamel Down, both of which are clearly not injected but infiltrated veins, are crowded with salt. In some cavities the crystal or crystals seem to exceed the volume of the fluid.

Thus, included crystals of salt seem characteristic of all the rocks of the south-eastern flank of Dartmoor, whether compact granite, injected veins, or infiltrated veins. I must confess to great surprise at finding the banded veins of quartz and tourmaline, which are so clearly formed by water and of gradual growth, correspond so closely in this respect with the crystalline veins injected indiscriminately into Granite, into Culm, or between Granite and Culm. These minute crystals of salt seem to form a connecting-link between the massive granites and the most recent of the veins we find running through them.

These salt crystals, though connecting the Dartmoor granites and veins, serve to differentiate the Dartmoor rocks as a whole from the Channel crystalline rocks.

The Channel granites may be described as having been constituted or reconstituted in the presence of water, as occasionally containing hornblende, and as being associated with gneisses.

The Dartmoor granites and veins, on the other hand, were constituted or reconstituted in the presence of brine, are

* For illustrations of fluid inclusions, with cubic crystals, see Dr. Sorby's "Structure of Crystals," *Quar. Journ. Geol. Soc.* xiv. 458.

very commonly schorlaceous, and are not associated with gneisses.

In the present paper I shall endeavour to show how these considerable differences may be accounted for, even on the assumption that the Dartmoor and Channel Granites are both Archæan.

In attempting the study of this question I have found it uncommonly difficult to obtain the requisite information as to the origin of granite, and have had to glean a statement here, and an incidental observation there, and put them together as best I could, so that if this paper should be deemed too elementary by some, I can only hope it may prove all the more intelligible to others.

Inanimate Nature possesses three potent magic wands with which, either separately or jointly, she effects many of her transformation scenes in the mineral kingdom. They are—Fusion, Solution, and Compression.

With Fusion and Solution we are all more or less practically acquainted. We melt sugar by heat in the presence of butter, and get toffy: we dissolve it in water as a means for finally obtaining sugar candy. Fusion and Solution are mainstays of the chemist and manufacturer, and are veritable foundation-stones of the arts and sciences.

About Compression we know less, perhaps because we have so few opportunities for compressing; but it is a veritable magic wand, and can do the work of its sister fusion occasionally when desired. Probably there is scarcely a member of this Association who requires to be told that brass is commonly obtained by melting together copper and zinc, and that a very considerable amount of heat is required for the fusion and union of the two metals. On the other hand, I expect a very small minority of our members are aware that brass has been obtained by applying enormous pressure to a mixture of copper and zinc filings. Let me quote from a report in the last volume of the *Reports of the British Association*:

“As to the formation of alloys by pressure, it was found that Wood’s metal was formed by submitting to a pressure of 7,500 atmospheres a mixture of filings of bismuth, cadmium, and tin in the required proportions. Rose’s alloy of lead, bismuth, and tin was obtained in a similar manner. Ordinary brass was got with difficulty by repeatedly submitting a mixture of zinc and copper filings to great pressure.”¹

¹ *British Association Report*, 1888, p. 520.

Let us note this well: "Although the temperature is hardly raised in the experiments, some of the metals at very high pressures flow and ooze out of the joints of the apparatus." So compression takes the place of fusion as a fair substitute. It is not that compression raises the temperature, and does the work by the instrumentality of fusion. Fusion is out of it altogether. Dame Nature occasionally can produce the same result by each of the three magic wands acting independently. Take quartz for instance—crystallized silica. Quartz can be crystallized from fusion (see Sorby "On the Critical Point in the Consolidation of Granitic Rocks, 1876"), quartz can be crystallized from solution, and quartz can almost certainly be crystallized by pressure.

My critics may justly require me to argue this latter point. Refer again to the *British Association Report* above quoted.² "If a body exist in allotropic modifications—as, for example, sulphur—the effect of pressure is to produce a coherent mass having specific gravity equal to that of the densest variety." Quartz can be fused into a glass, and we are told that in this and other cases "the specific gravity of the glass is always found to be less than that of the crystal from which it is produced,"³ the specific gravity of quartz being 2.663, and that of the glass 2.228. The same authority continues: "We may conclude . . . that the devitrification of a glassy rock is accompanied by an increase of density . . . and subsequently since an increase of density accompanies devitrification, it may reasonably be inferred that pressure will tend to bring about devitrification." (p. 13.)

Let us compare the evidence. Crystalline quartz and quartz-glass are the same substance in different forms, the crystal being heavier than the glass. The physicist gives us a general rule, that under great pressure a substance that can exist under more than one form has a tendency to acquire the specific gravity equal to that of the densest variety—the heaviest in fact. Quartz-crystal is heavier than quartz-glass, and therefore we may expect that quartz-glass, under great pressure, will assume the form of quartz-crystal.

Now turn we to the petrologist. He *observes* that natural glass has a tendency to devitrify, to turn from glass into crystal; and thence infers that pressure will tend to bring about devitrification. Thus the physicist gives us the rule, and the petrologist furnishes us with the example.

² "Experimental Knowledge of the Properties of Matter," p. 520.

³ TRALL, *British Petrography*, p. 12.

I thus infer that crystalline quartz can be produced by Compression, as well as by Fusion and Solution. Quartz can be produced by Solution, but quartz is insoluble in cold water. To dissolve quartz we require superheated water, or water charged with some solvent acid, of which boracic acid is one.

We have now, I think, enumerated the chief agents that can turn silica into crystalline quartz; viz., Heat, resulting in Fusion; superheated water, producing Solution; acidulated water, also producing Solution; and Compression.

When we consider that quartz may very well be acted upon by heat, compression, and acidulated waters all at the same time, we learn how complicated may be the phenomena with which we have to deal.

Fortunately, with respect to our enquiry into the age of the Dartmoor and Channel Granites, we are strictly limited as to temperature. We have nothing to do with incalculable temperatures and molten lavas exceeding the artificial temperatures of our laboratories. The temperature within which we must confine ourselves is less than that of an ordinary drawing-room fire, and far less than that of a blacksmith's forge.

The liquid inclusions, containing brine and salt crystals, in our Dartmoor granites and veins tell us clearly enough that we have superheated water to deal with, and water highly charged with salts; but water it is, and not gas: and our quartz is formed in the presence of water, and not fused at some incalculable dry heat.

I have said we are limited as to temperature. The reason is as follows:—If water be strictly confined and heated, its temperature may be raised to a great height; but a point is ultimately reached when, in spite of all compression, water refuses to retain the liquid form, and passes into highly-compressed steam. This point is known as the critical temperature of water, and the heat is said to be about that of melting zinc.⁴

Let us imagine the case of a fragment of quartz enclosed in an infinitely strong vessel full, or nearly full, of water. We apply heat. As the water gets hotter and hotter, it attacks the quartz and dissolves it. Should the water be allowed to cool, the quartz will be crystallized out on cooling; but should the heat be continued, it will also be deposited, though in a different way. If the heat be continued beyond the critical point of water, the water will be turned into compressed steam, occupying, it is true, the exact space

⁴ See HARTLEY on "Fluid Cavities," *Jour. Chem. Soc.* 1877. Reprint, p. 8.

which the water occupied, but a gas, and not a liquid, and therefore incapable of continuing to hold the quartz in solution. The deposition of quartz by water overpassing its critical temperature may, I think, be occasionally observed in the very finely-divided quartz seen in some rock sections.

Quartz is infusible in the ordinary blow-pipe flame, though fusible in that of the oxy-hydrogen blow-pipe. So it would appear that between the heat represented by the critical temperature of water and the lowest heat sufficient to fuse quartz, the finely-divided quartz, thrown down by the vaporized water, would lie by, unacted on by either water or heat. It would not be acted on by way of solution, for there would be no water present, but only steam; nor by way of fusion; for the temperature would be insufficient. Under such circumstances, the quartz would likely enough be caught up and included in the more fusible minerals, should any such happen to be present.

In case of a lowering of the temperature below the critical heat of water, compressed steam, if present, might reappear as water, and re-dissolve any free quartz not caught up in other minerals, and a low-temperature rock of the character of granite might be reconstituted. Should the temperature, on the other hand, rise high enough to fuse the quartz, a high-temperature igneous rock might be expected to result.

The question of the critical temperature of water is of the utmost importance in the study of granitic rocks. The subject was, I believe, first brought forward by Dr. Sorby, in a very short paper of but four pages, read before the Royal Microscopical Society in 1876, for a copy of which I am indebted to the author, together with many other valuable reprints.

In 1858 Dr. Sorby read a paper to the Geological Society which has justly become classical.⁵ Unfortunately, if an author produces a work of standard authority, such a work, even when breaking new ground, is expected, as it would appear, to have no defects, either of commission or omission. Now Dr. Sorby, in the paper referred to, showed that the fluid inclusions and bubbles in rocks might give some idea of the pressure under which the rocks were formed, and of the depth of the superincumbent strata. For the last thirty years microscopists have been pointing out that the included bubbles are often of different sizes, and that Dr. Sorby's brilliant generalization cannot be depended upon. To take

⁵ *Quar. Journ. Geol. Soc.* xiv. 453.

the latest of these. The following passages occur in *British Petrography* (1888), p. 26:

"Assuming that granites are formed at a temperature of 360° C. . . . Dr. Sorby has endeavoured to determine the pressure under which different varieties have been formed. . . . It is much to be regretted that more extended observations have not tended to establish the general applicability of this method, or to give confidence in the accuracy of results obtained by means of it. It is based on the assumption that water and water-vapour are the only fluids present in the inclusions—an assumption which in many cases is probably incorrect. The experiments of Vogelsand and Geissler, for instance, proved the existence of carbon dioxide in granite of Johann Geordenstadt."

The author then refers to Mr. Phillips's observations on the absence of constancy in the ratio of the volumes of bubbles to liquids in the same rock.

The paper above referred to, read by Dr. Sorby on the 6th March, 1876, contains the following passage:

"Thus, for example, in many granites we find true gas cavities, and fluid cavities with a variable abnormal amount of included gas, whilst the quartz in the extremely coarse-grained granite veins at Rubislaw, near Aberdeen, contains no gas cavities, and the vacuities in the fluid cavities are of almost absolutely uniform relative size, as is also the case in that of some simple quartz veins. I may, however, here say that the very great variation in the relative amount of water and *liquid carbonic acid* in the cavities clearly proves that very great changes in the surrounding circumstances sometimes took place, even during the growth of one single crystal; and there is good reason to suspect that there may often have been considerable variations in temperature and pressure, as well as in the relative amount of water and gas."

Indeed, in his 1858 paper Dr. Sorby, describing an inclusion (No. 52) containing two liquids, writes: "I very strongly suspect that further research will prove that one is water and the other a condensed gas." (p. 473.) In 1869 he published further researches on the occurrence of carbonic acid in sundry jewels.⁶

It is evident that Dr. Sorby had fully weighed the variability of volume and composition of included fluids some thirteen years ago at least, and, from the words I have italicised, that he was well aware that fluid enclosures occasionally consist of fluids other than water.

Liquid carbonic acid, when present, is of great value in proving for certain that the rock in which it is contained

⁶ *Proc. Royal Soc.* 1869, p. 291.

was formed under considerable pressure, from the simple fact that at moderate pressures carbonic acid is a gas and not a liquid.

At a temperature of 32 F. carbonic acid requires the pressure of $38\frac{1}{2}$ atmospheres to liquefy it.⁷ Its tension, "when it has just passed the critical point, amounts to 109 atmospheres." (*B. A. Report*, 1877, p. 234.)⁸

The same Report closes with these words: "It is possible to determine within certain limits the temperature which a rock or mineral has endured (and that, too, very easily), if liquid carbonic acid is found enclosed in it." (p. 236.)

I am not aware that carbonic acid has been found in the Dartmoor granites, but, failing carbonic acid, the salt crystals already referred to are good evidence of pressure, as the water would not have been able to take up so much salt as we see it has deposited in the cavities, unless it had been highly superheated. Not that this fact is of particular interest with respect to the granites, as it is generally admitted that they were formed under great pressure; but it is of great interest in the case of the infiltrated veins, as less is known about the conditions under which they were formed.

The late Mr. Godwin-Austen held that the Dartmoor granites were of three ages; Mr. W. Pengelly reduced the number to two;⁹ and Mr. Teall has more recently further reduced the number to one, in the sentence, "The granite of Dartmoor is certainly of later date than the Culm-measures and earlier than the Trias."¹

There are at least three² distinct theories as to the birth of Dartmoor Granite taken as a whole:

- (1) That it was upheaved as one vast plastic mass.
- (2) That it was ejected from the Plutonic regions as a laccolite or series of laccolites.
- (3) That it was upheaved as a rock already solidified.

⁷ MILLER'S *Elements of Chemistry*, ii. 56.

⁸ By W. N. Hartley, E. J. Mills, and W. Chandler Roberts.

⁹ *Trans. Dev. Assoc.* ix. 413.

¹ *British Petrography*, p. 316.

² When the above was written I was not aware that Mr. Worth had published his opinions as to the volcanic origin of the Dartmoor granite, since quoted by Mr. J. L. W. Page in "An Exploration of Dartmoor." On my return home, after a fortnight's absence, on the 18th June, I found awaiting me, by the kindness of the author, an early proof of Mr. Worth's lecture before the Plymouth Institution, "The Dartmoor Volcano" (18th October, 1888). Had this lecture come to hand earlier, the present paper would have been cast on different lines; but the time allowed for sending in MSS. having almost expired, the present communication must needs go forward in its original form.

It has always seemed to me an insuperable objection to theory No. 1 that the contact alteration in the sedimentary rocks is often so very slight. A superficial area of upwards of 130,000 acres of red-hot granite would take some time to cool, and might be expected to produce some extraordinary effects on every rock with which it came in contact, with a somewhat gradual passage from crystallines to sedimentaries. Instead of this the contact junction is often sharply enough defined to make a good slide for the microscope.

The laccolitic theory, that the plastic magma welled up through a central orifice, spreading horizontally like a mushroom, is practically the same as that already considered, so far as the 130,000 acres of red-hot granite is concerned, unless it be assumed that there were numerous successive flows; and the general uniformity in composition of the Dartmoor Granite seems to militate against this idea; as also the abundance of salt in the different veins and its presence in the granite too, thus, so to speak, linking the granitic area as a whole together.

The third theory, that the Granite was upheaved as a rock already solidified, is at once face to face with what is at first sight an insuperable objection; viz., that the assumed solid rock penetrates its enveloping sedimentaries with numerous injected veins.

Of the three evils I shall choose the last, as being in better accord with the facts that have come under my own notice. With respect to the objection that the Granite must be more recent than the Culm-measures because it penetrates them, I reply, the Granite not only penetrates the Culm-measures with injected veins, but it injects veins betwixt itself and the Culm-measures, and it even invades itself with veins of different kinds.

One thing, however, we notice at once; viz., that the components of these veins are minerals found in the general mass—tourmaline, quartz, and felspar. The calcareous minerals, such as hornblende, augite, and epidote; and many of the magnesian minerals, such as chlorite, serpentine, and olivine, are not commonly reported from Dartmoor, even if they occur there at all. Thus it would appear that the mass of the granite of Dartmoor has itself afforded the material for the injections, and that the latter have not been supplied from any extraneous source. One might expect a granite of mediæval age welling up from the bowels of the earth through the Palæozoic sedimentary rocks, so many of them

rich in lime, to afford a little more variety both in itself and its included veins.

Assuming that the Culm-measures were deposited on the Granite, one thing is clear; viz., that the sea was fairly deep, as the sediment was generally very fine.

I propose to enquire how this theory, that the sedimentary rocks now found overlying and bordering the granite were deposited as mud and silt on a granite sea-floor, will agree with the facts of the case.

We go back to the time when Devonian slates were being deposited over our assumed granite floor, to be followed in due order by Carboniferous slates as well. The great earth movements that have since shattered our Devonian and Carboniferous rocks are still in the distant future. Before they commenced the crystalline rocks that now form the southern border of Dartmoor were covered immediately by Devonians in some localities, by Culm-measures in others. Such an arrangement could easily be brought about by a simple rise and fall of the land, denuding the Granite in places of its Devonians, and laying it partially bare for an immediate covering of Culm-measures. At the close of these minor earth movements our granitic area, extending from Dartmoor to the Channel, and perhaps to Brittany and beyond, was covered, so far as South Devon is concerned (at any rate north of the disputed metamorphic schists in the extreme south), with the fine sediment of the Devonian and Culm-measure rocks. Our great earth movement, the one that specially concerns this paper, took the form of a severe north and south squeeze, with a tendency for the land to rise in the south-west of England, and to sink or remain in *statu quo* in the Channel area. It is perhaps very unphilosophic to speculate so freely; but I cannot but remember how, in a course of lectures by the late Professor Willis, Jacksonian Professor at Cambridge, the Professor strongly recommended his class, when studying a complicated piece of mechanism, to get at once at the motive power, and not to be led away by intricate details which would easily be understood afterwards. I assume that in our present case the motive power was a contraction of the earth's crust, and that all the phenomena we have to account for originated in that prodigious squeeze or series of squeezes.

Our crystalline area covered with sedimentary rocks—i.e., comparatively incompressible rocks covered by very compressible ones—was gradually submitted to a strain which caused the composite crust at last to yield. Now there is

but one way in which a solid incompressible rock can yield to strain, and that is by fracture; and as the Dartmoor area was gradually pressed up into an arch, so was the solid granite rent and shattered. But the very yielding to pressure reduced the strain in the higher horizons, whilst accentuating it at the lower horizons, as can easily be shown by tilting up two books by lateral pressure, when all the strain will be seen to come on the lower edges. As the rising Dartmoor area was escaping the heaviest of the pressure by yielding to it, the Channel area, nipped in the bottom of a synclinal curve, as one of the abutments of the Dartmoor arch, received the full weight of the squeeze. On this hypothesis we can explain two important facts; viz., that the Channel rocks evidence intense pressure, and the Dartmoor rocks extreme fracture, and this without requiring the presence of any mountain range in the Channel area. We further thus explain the characteristic injected veins of the Dartmoor rocks, in that the same lateral pressure which would relieve the strain on the upper granitic horizons would intensely and irregularly crush the lower zones of the arch, giving rise locally to great heat, with solution and reorganisation of the granite.

It can be shown, I think, that this crushing and alteration of the granite took place when it was below the sea-level. We have seen that the quartz in granite is readily dissolved by superheated water, and that when the quartz crystallises out it occasionally encloses portions of the expanded water, which afterwards by contraction takes the form of fluid enclosures with bubbles. As a general rule in granites these enclosures seem to be pure water, and, when small, the contained bubbles are extremely active within them. The cavities in the Dartmoor quartzes, as we have already seen, very frequently contain cubic and other crystals, and the bubbles in these are very inactive. The contained fluid is evidently brine, which may account for the general sluggishness of the bubbles. I have, however, observed fairly active bubbles in certain Dartmoor enclosures which show no evidence of containing brine.

In the case we have been considering, if the rocks forming the sea-bed were fractured by rising under the influence of lateral pressure, the salt water would penetrate the crust of the earth, and on reaching a depth where the vertical pressure of the water column would be great, and the crushing in progress would be evolving sufficient heat, the superheated salt water would proceed to dissolve any granite it might find itself in contact with, and such granite on reconsolidation would

necessarily enclose salt water instead of fresh. If the brine had become concentrated, the quartz would then enclose water, containing large quantities of salt, which would necessarily be redeposited on cooling. The presence of salt in so many different sorts of Dartmoor rocks—in the granite itself, in veins which seem thoroughly crystalline in their character, and also in veins which appear to be deposited in bands from solution—seems strongly indicative of Dartmoor having been under the action of salt water for a long period, and this can be best explained on the hypothesis that it was below the sea-level.⁸

There is yet another little point worth noticing, and that is, that the entire absence of calcareous veins indicates that the Dartmoor fissures were filled by minerals coming up from below, and not by minerals descending by percolation from a superincumbent mass of sedimentary strata, Devonian and Culm-measures, lying on the Granite. It is easy enough to see that quartz will be deposited by an ascending current, and calcite by a descending one. Carbonate of lime is soluble in water acidulated with carbonic acid; carbonic acid is more soluble in cold water than in hot (for which reason ginger-beer is more “up” in summer than in winter); hence water charged with carbonate of lime will tend to deposit calcite as it *descends* into the earth and encounters a gradually-rising temperature. With quartz the contrary holds good. Quartz is more soluble in hot water than in water less hot, and is not at all soluble in cold water; hence quartz will be deposited from solution as it *ascends* from the hot nether regions to the cooler strata above them. I have seen quartz veins in Silurian strata cut by calcite veins, and explained the fact long ago by pointing to the great probability there was that the calcite veins came from limestone rocks since removed by denudation.⁹ Thus I

⁸ When these words were written I had overlooked the fact that Prof. Prestwich long since pointed out that the chlorides in Volcanic Rocks are clear evidence of the access of sea-water to many existing volcanoes. (See *Proc. Royal Soc.* xli. 158.) This fortifies my contention as to the origin of the Dartmoor brine inclusions. A. R. H., Sept. 20, 1889.

⁹ The following is the passage referred to, in my presidential address to the Torquay Natural History Society in November, 1879: “The mineral veins in the Borneess Cliffs seem to me to point to a time when their Silurian rocks were overlaid by some vast limestone formation, which has since been swept away by denudation—a formation which, though so completely erased from geologic history that we are unable to assign it to Silurian, Devonian, Carboniferous, or a more recent age, has nevertheless served a purpose in supplying the lime requisite to seal up certain interesting relics in the stalagmite of the Borneess Cave, and in the stalagmite itself has served to supply us with a possible clue for ascertaining the minimum antiquity of certain of the cave deposits.”

think that the absence of calcite veins in the Dartmoor granites, together with the constant presence of quartz highly charged with salt, which necessitates both heat and pressure—these two facts indicate that the Dartmoor veins were filled when the granite was below the level of the sea, and probably at a very great depth below it. How many atmospheres would be required to account for the large amount of salt in the fluid enclosures I must leave to others to calculate.

On the hypothesis that the Dartmoor Granite was fractured under the sea, and that the sea water obtained access to it in every direction, we can account for the abundance of brine enclosures in what we must consider reorganised granite, and this without interfering in the least with any original water enclosures which the brine has not happened to have reached.

Dr. Sorby has pointed out how easily bubbles produced under different pressures can be formed in the same crystal. Just in the same way brine and water might be caught up in the same crystal—brine in one enclosure, water in another. In one of my quartz-and-schorl slides there is a very well-defined hexagonal crystal of quartz containing fluid cavities. Now when this crystal was partially grown some change took place in the surrounding conditions, and a deposition of schorl commenced on the boundaries of the quartz prism; then the old conditions returned, and the quartz grew on, enclosing the tourmaline, which remains to mark an intermediate stage of growth. It is clear that if during the growth of this crystal there had been alternations of fresh water and of brine in different stages of saturation, we might find a very great variety in the inclusions caught up by this single crystal in its growth.

This crystal tempts me to a slight digression on the formation of tourmaline—a subject, however, which is closely bound up with the problem of the Dartmoor rocks. It is probably the key of the problem, whether I have succeeded in finding it or not.

One of the most interesting schorlaceous rocks is luxulyanite, as it contains two forms of tourmaline—a straw-coloured, massive variety, and a green variety formed of bundles of radiating and occasionally acicular crystals. This beautiful rock has been fully described by Professor Bonney in a paper in the *Mineralogical Magazine*.¹ My Water Rock crystalline vein is crowded with very perfect independent crystals of tourmaline of the straw-coloured luxulyanite

¹ Vol. i. p. 215.

type. The aqueous veins, both from Neadon Cleave and Hamel Down, contain green tourmaline of the radiating luxulyanite type. In my Dartmoor specimens it takes two distinct classes of veins to match the luxulyanite tourmalines, and even so imperfectly. Luxulyanite then would seem to be a complex case of a schorlaceous rock, including tourmaline in two very distinct modifications, one of which appears to be a tourmaline crystallised at a high temperature, the other in the lower temperature of an aqueous solution.

The abundance of salt in these Dartmoor schorlaceous veins suggested to me the idea that the soda of the salt might be expected to have some effect on the felspathic material. On close examination, I detected what seemed to me distinct symptoms of the twinning of plagioclase. Moreover, according to Dana, the black² variety of tourmaline is a soda-tourmaline; in which case, the black tourmaline and the plagioclastic felspars are both in good harmony with the penetration of the original granite by heated brine (chloride of sodium) holding the constituents of the granite, and boracic acid from the nether regions, in solution. It is worth considering whether, in the presence of soda and extreme pressure, orthoclase might not have a tendency to turn into plagioclase, the felspar of lowest specific gravity into one of higher specific gravity.

The next point we come to is the probable effect of the pressure, which formed the Dartmoor Arch, on the sedimentary strata on the south. On the immediate south-east flank of Dartmoor the Culm slates are thrown to an elevation of some 1300 feet at Black Hill.³ The cairn or stone circle on the summit of this hill is composed of the sedimentary and contact rocks—good evidence of their convenient proximity. These sedimentary rocks in the neighbourhood, though very much disturbed and comminuted, show no signs of having been subjected to extreme compression; and it seems to me that the alteration zone, on this border of the Moor at least, may be accounted for by the local crushing and motion attendant on the upthrust of the strata having been converted into heat. The disturbance of the compressible slates in immediate contact with a rising mass of incompressible granite must necessarily have been very great, and something of the nut and steam-hammer character.

The Palæozoic strata in South Devon are intensely crumpled, and crumpling evidences great contraction of area. In his

² The greenish varieties in the microscope appear black to the naked eye.

³ So called in the six-inch map.

paper on "Regional Metamorphism" Professor Prestwich refers to a case in America, mentioned by Professor Clappole, in which "95 miles of country have been compressed into 16 miles."⁴ On the hypothesis that the South Devon rocks have been nipped between the Dartmoor granites on the north and the Channel granites on the south, an immense contraction of the sedimentaries is quite natural, as the granitic areas are practically incompressible, and the area of contraction would thus be limited to the non-crystalline rocks. The ready solution of granite at comparatively low temperatures will also explain how a synclinal bend of granite with sedimentaries resting on it might become weakened by heat, owing to its depth in the earth's crust, and, yielding to the pressure of the more rigid rocks on either side, throw all the weight of the squeeze (which with uniformly strong strata would be distributed over a large area) on the superincumbent sedimentaries, extending perhaps over a comparatively limited district.

Very severe pressure, as we have already seen, may induce alteration in rocks in two ways; viz., by such an amount of motion, and arrested motion, as to produce heat, which heat may induce solution by the aid of water if moderate, or actual fusion with volcanic phenomena if intense; or the said pressure, by long-continued action, slowly compressing the strata, without any great evolution of heat, is competent to induce the compression metamorphism we have already considered. The greatest outbursts of volcanic energy would naturally take place where the motion in the strata would be greatest.

Metamorphic phenomena might reasonably be looked for where simple compression has been at a maximum. It seems worth noticing that on the borders of the granitic area of Dartmoor, where the crush and motion in the upheaved Palæozoic rocks must have been intense, the Geological Map indicates strong volcanic energy. On the theory I am contending for, these eruptive rocks were the result of the crush between the rigid Archæan Granite and the Palæozoic strata, and are therefore more modern than the Granite. On the hypothesis that the Dartmoor Granite as a whole is of Carboniferous age, the non-intrusion of the eruptive rocks into the granitic area has been accounted for on the assumption "that they (the eruptive rocks) are of higher antiquity than, and have been cut off and thrust out of their original position by, the granitic mass."⁵

⁴ *Proceedings Royal Society*, 1885, p. 431.

⁵ W. PENGELLY, Pres. Address, *Trans. Devon. Assoc.* ii. 17.

It would be very convenient for the theory I am advocating could the old view be maintained, that the South Devon schists are altered Devonians; but in the face of Professor's Bonney's conviction, that they are of Archæan age, I hesitate to express an opinion one way or the other.

When at Salcombe two years ago I brought away a specimen of the schist near the signal station on the Bolt Head, and have been greatly struck by the appearance of this rock in the microscope. A somewhat similar section is figured by Professor Bonney in his paper on "The Geology of the South Devon Coast," &c.,⁶ which illustrates well the extraordinary compression suffered by the rock in question. In my slide there are two quartzes, one charged with micro-liths and mica, just as though the mica had floated out into a solution, and another sort in which the original foliation of the rock can be detected curving right through the quartz grains.⁷ When I first saw the latter I had no conception how this structure could possibly originate, but on the compression theory it would seem possible that this quartz had been formed in the slate by accretion of siliceous particles, without entire obliteration of the first formed foliation structure, just as a calcareous fossil can be silicified without losing its identity. The mica in the slide is very striking—light green and light pink in the polariscope. When I examined my Bolt Head slide I was struck with the similarity of this mica to one of the micas in the Eddystone gneiss; in fact, the Bolt schist looks something like what we might suppose the Eddystone gneiss might have been in the process of cooking. Some of the quartz in the slide referred to is full of this mica. In the Eddystone, on the other hand, it is the felspar which contains it. Mr. Tawney noticed the fact that flakes of mica occurred in the Eddystone felspar, and I note that the variety seems identical with that in the Bolt Head under discussion. Thus in both rocks mica seems one of the earliest formed minerals.

If a mica-schist can ever be compressed into a gneiss, it

⁶ *Quar. Journ. Geol. Soc.* xl. 15.

⁷ Some of these polarise brilliantly like quartz, but others only change from white to dark grey. Probably some at least are grains of kyanite, as described by Miss Raisin (*Quar. Journ. Geol. Soc.* xliii. 724.) Kyanite in the compressed region of the Bolt and chiastolite in the less compressed slates on the edge of Dartmoor are significant facts enough. The composition of kyanite is, silica 37.0, al. 63.0. That of chiastolite is identical, but there is this difference, the specific gravity of kyanite is 3.6 to 3.7; that of chiastolite, 3.1 to 3.32. Kyanite and chiastolite are allotropic modifications of the same body, and we have seen that in such cases the form assumed depends upon the pressure.

seems possible that the mica-schists of the Bolt have passed into the gneisses of the Eddystone, which latter lie to the southward, and nearer our assumed area of maximum compression (a compression induced by the resistance of the Archæan granites of the Channel to the heavy squeeze which finally resulted in the upheaval of the Archæans of Dartmoor). Not that the Eddystone lies actually to the south of the Bolt, but its latitude is several miles south of that headland.

On such a question as this I must needs speak with the greatest hesitation, and remember that Mr. Teall has informed Mr. Worth that, the garnets excepted, this rock (the Eddystone gneiss) has the closest resemblance to a gneiss from Ben Varock, which is undoubtedly a granite metamorphosed by pressure.⁸

The facts of the case are that the Eddystone gneiss lies between a metamorphic schist on the north, and a true granite (No. 19) on the south; and it may be open to question whether this rock has resulted from extreme compression of the schist or of the granite. The collection of rocks from the Channel abounds in gneissic granites or granitoid gneisses—intermediates which seem to indicate a zone of severe pressure, without sufficient arrested motion to result in fusion; just as in the Dartmoor area we noticed less compression, but more motion and heat, dissolving the granite (in presence of brine), and baking the sedimentaries adjacent to the granite.

Both in the Dartmoor and the Channel areas we have evidence of original, typical granites, very simply compounded of mica, quartz, and felspar; and in these areas we have evidence, of solution in the one case, with the introduction of new elements, resulting in the production of tourmaline and chloride of sodium; and of fusion in the other, with the introduction of new elements, resulting in the production of both granites and gneisses, as well as diorites and syenites, containing hornblende, a mineral characterised by its ready fusibility, just as quartz is characterised by its ready solubility.

Thus, on the theory of the Archæan age of both the Dartmoor and Channel Granites, we can offer an explanation of many of the problems afforded by the intervening rocks, the chief keys being that in the Dartmoor area we have the phenomena of solution in great force, and in the Channel area those of compression.

⁸ *Trans. Devon. Assoc.* 1887, p. 497.

We have seen that the character of the Dartmoor vein-stones indicates that the veins were filled whilst the granite now containing them was below the level of the post-Carboniferous sea, the veins injected between the Culm and the Granite, as well as into the Culm and into the Granite, all containing brine and evidencing considerable pressure. This being the case, one great difficulty is alleviated, if not removed; viz., the immense amount of denudation which has to be accounted for after the injection of the veins (which injection corresponds in time with the birth of the entire granite mass on the assumption that the entire mass is post-Carboniferous.)

If the ancient granite was cracked and crushed, and filled with veins, before its elevation above the sea-level, it only requires a very steady and gradual rise of the land to plane away any amount of Devonian and Culm-measure slates, and to leave no signs of littoral deposits to explain the process to future geologists.

In Mr. J. L. W. Page's recent work, "An Exploration of Dartmoor," published (May, 1889) since the foregoing was written, the author refers to an address delivered in 1888 by Mr. R. N. Worth, in which the opinion is expressed that "Dartmoor was once a very large volcano, whereof only the stump remains." The author also refers to Mr. Ussher's view, that "our Dartmoor granite is nothing more or less than a laccolite." (*Op. cit.* pp. 14, 15.)

From this it would appear that the laccolitic and volcanic theories are the alternatives which meet with most approval at the present moment.

Were Dartmoor the core of a mediæval volcano, of an age corresponding with the close of the Palæozoic period, after the extensive lime and magnesia-bearing strata of the Palæozoic rocks had been accumulated on the earth's crust, and buried at great depths within it, it seems to me that the common type of volcanic minerals, containing lime and magnesia, or lime or magnesia, in large quantity, such as hornblende, augite, olivine, and epidote, might fairly be looked for, and that we might expect to find hornblendic granites, diorites, and syenites, in the Dartmoor district, instead of only the very simple granite which is actually there.

As has been already stated, this communication has been suggested by the discovery that chloride of sodium is abundant in the schorlaceous veins of the Dartmoor Granite, and absent from the crystalline rocks of the English Channel.

I should have been glad to have held it over for another year, and to have had an opportunity of studying Mr. Worth's views of the volcanic origin of Dartmoor, but it has seemed to me desirable that this paper should appear in the same volume of our *Transactions* that contains my concluding notes on the "Submarine Geology of the English Channel." It had been my intention merely to add a few words to that paper, dealing with the age of the Dartmoor Granite; but besides the fact that speculation, such as I have indulged in in the foregoing pages, would be very much out of place in my series of notes, the question of the age of Dartmoor is one distinct in many ways from that of the submarine geology of the English Channel, embracing, as the latter seems to do, a great variety of rocks, sedimentary as well as crystalline.

The motto I have chosen for this paper will indicate both its origin and that I look upon it rather as the argument of an advocate making the best of one side of a question, than the opinion of a competent judge, who has had all the facts of the case brought under his notice. My own position is, that seeing great difficulties in the way of accepting either the post-Carboniferous laccolite or volcano, I suggest Archaia as a possible thread to lead us out of the labyrinth.

In concluding this paper on the Dartmoor Granite, intimately connected as it is with my Channel notes, I take the opportunity to express my deep sense of indebtedness to Mr. R. N. Worth, F.G.S., who, working in the same field of science, has invariably afforded me the most generous assistance. To him I have been indebted for specimens of the Eddystone rock; for fragments of Trias trawled in the Channel; for specimens of luxulyanite, and of a somewhat similar stone from Dartmoor—all of which have been of great value to me. The "white luxulyanite," sent me unsolicited, came in extremely apropos when I was first investigating the salt inclusions, as, being itself charged with salt, it clearly indicated that salt was no mere characteristic of the veins in the granite of the south-east border of Dartmoor, but was equally abundant on its south-western side.

The facts of Dartmoor and the Channel, so far as I understand them, seem to tend to the following conclusions:

1. The massif of Dartmoor is Archæan.
2. The salt-laden veins, both crystalline and those evidently aqueous, are inter-Carboniferous or post-Carboniferous.

3. The portions of Dartmoor granites which contain salt have been reconstituted during the age of the saliferous veins.

4. The typical granites of the English Channel are Archæan.

5. The hornblendic granites and the intrusive rocks are more modern than the typical granites.

6. The gneiss of the Eddystone is closely connected with the mica-schists of the Bolt, and both were metamorphosed by compression against the unyielding mass of the older crystalline rocks of the Channel.

So long as the salt-laden veins are allowed to be post-Carboniferous (as they must necessarily be since they pierce rocks of that age), there seems to be nothing to limit the duration of the period during which the compression of the sedimentary strata between the Dartmoor and Channel granites may have been in progress. The filling of the fissures in the granite by quartz, felspar, and schorl was probably one of the final results of the squeeze, so far as any reconstitution of the rocks was concerned, and this filling must have taken place before the elevation of the veins above the sea-level; and as the veins are found at considerable altitudes, practically the whole of Dartmoor must have been still beneath the waters when the schorlaceous veins were deposited by the action of superheated brine and boracic acid.

DESCRIPTION OF PLATE.

1. An injected vein, with idiomorphic straw-coloured tourmalines, from Water Rock. Magnified about 9 diameters.

3. An infiltrated vein, with idiomorphic quartz and green tourmaline, from Neadon Cleave. About 22 diameters.

2. Mica-schist from the Bolt Head: shows the relations of the mica, quartz, and kyanite to each other. About 5 diameters.

4. The same slide more highly magnified, with traces of the original foliation discernible in a grain of kyanite. (See Miss Raisin on "Metamorphic Rocks of South Devon," *Quar. Journ. Geol. Soc.* xliii. 724.) About 22 diameters.

No. 1 represents a vein injected in a fluid or semi-fluid state, and then solidified as a whole, without any indication of the sequence of mineral consolidation, except that the tourmalines, and the felspar crystal at the bottom of the picture, were in existence before the quartz, which more or less encloses them, crystallised out. Note the tendency of the quartz to separate into hexagonal prisms, as also the absence of deformation by crushing.

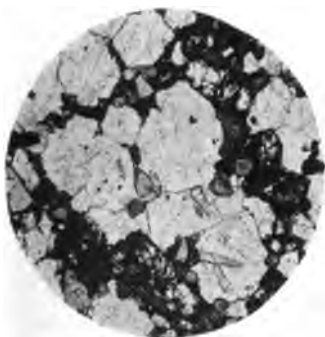
No. 3. A vein gradually built up by infiltration. Note the growth of the hexagonal quartz crystal. First quartz; then tourmaline on all six facets; then quartz on three facets, with tourmaline continued on the remaining three; then tourmaline all round. The transparent quartz and dark tourmaline transcended the power of my camera to depict satisfactorily. The tendency of the tourmaline to crystallise in radiating bundles is, however, just discernible.

No. 2. Bolt Head mica-schist. The centre of the picture gives us the much-crumpled slaty rock with foliation well defined by flakes of mica. Near the centre is a grain of kyanite. In the upper right-hand corner the non-crystalline and crystalline minerals (slate and mica) are about equally divided. At the upper left-hand side the mica is in excess of the slate, and the foliation is defined by the remnants of the non-crystalline slate. Below this area of mica is a region of quartz, into which flakes of mica occasionally float off, and through which the foliation of the original rock can still be occasionally traced.

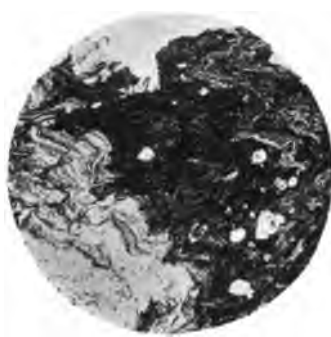
No. 4. The same grain of kyanite magnified further to show original foliation structure. The dark parts of this picture represent the original slaty rock, the lighter parts the mica. Note evidence of intense compression in both these pictures.

I have to offer my best thanks to my friend, Mr. W. M. Baynes, for having placed at my service the great skill he has acquired in the preparation of lantern transparencies. The accompanying plate was prepared by him from four of my own negatives, differing in size and intensity. These Mr. Baynes copied in such a manner that all four pictures could be printed mechanically from a single negative.

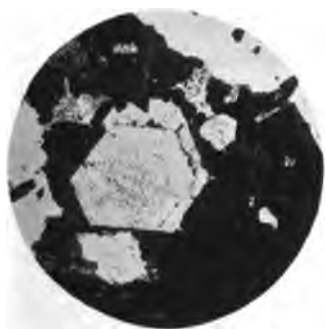
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GEOLOGICAL NOTES
ON THE SOUTH-WESTERN LINE BETWEEN
LYDFORD AND DEVONPORT.

BY R. N. WORTH, F.G.S.

(Read at Tavistock, July, 1880.)

ONE of the most interesting geological districts in Devon lies between Lydford and Tavistock, thence to the Tamar westward, and to the Three Towns southward; taking a three-mile belt of country north-west of the Tavy to its junction with the Tamar, and then following down the eastern bank of the latter river to its lower estuary. It is peculiarly attractive to the stratigraphical geologist, because it includes a disputed frontier between the Carboniferous and Devonian systems; while it yields to the petrologist an unusual variety of igneous rocks. The paucity of fossils, so marked as to be surprising, deprives us practically of the aid of the palæontologist in settling the boundaries, and hitherto there has been a remarkable absence of good sections. The construction of the new line of railway from Lydford to Devonport, following the higher ground commanding the valleys of the Tavy and the Tamar throughout the greater part of its course, and comprising in its total length of 22 miles 22 chains many cuttings, in some cases as much as 75 feet in depth, has, however, supplied unrivalled facilities for study; and I have to lay before the Association some notes on what I have observed during repeated visits while the works—still incomplete—have been in progress.

I can only regret that these notes are not more exhaustive, and my conclusions more definite. If, however, I have gleaned little else, I have learned that the problems involved are yet more complicated in their details than they seemed; and that while I think we can see the direction whence our

queries are likely to be answered, nothing short of a patient study of practically every yard of the exposures will give the best-skilled geologist material for a conclusive solution, while even then the knowledge gleaned may be incomplete.

There are two very great difficulties, apart from questions of interpretation, in dealing with the geology of this district. The bulk of the rocks consists of slates, so cleaved that it is not always easy or even possible to distinguish between cleavage and bedding. Nevertheless, there is fair reason to believe that their cleavage and lamination generally agree in direction; and Mr. Ussher has noted the very occasional occurrence of crinoid joints on cleavage faces as leading to the same conclusion. The other difficulty has been already mentioned—the almost absolute absence of fossils, though here and there, in what appear to be continuing beds on the east and the west, they sporadically occur.

The current Geological Survey Map of this part of Devon represents practically the work and conclusions of Sir Henry de la Beche, and carries the southern boundary of the Carboniferous rocks west of Dartmoor, along an undulating horizon from near Lezant, a little south of Dunterton, north of Milton Abbot, curving down by Churlhanger, to the granite near Cocks Tor—the line being taken for the greater part of the distance along the southern edge of a band of igneous rock stretching from Dunterton through Milton Abbot. A band immediately to the south, ranging from Endsleigh, by Lamerton and Kilworthy, to Sowtentown, Sir Henry treated as being wholly in the Devonian. Dr. Harvey Holl¹ regarded these and other strips as being repetitions of the same bed or set of beds; and Mr. Rutley, accepting that view, connected them with Brent Tor, and suggested that the bands of schistose lavas, &c., at Saltash might belong to the series, in which case, as the Saltash lavas are undoubtedly intercalated in Devonian strata, Brent Tor and its products must be Devonian also. Hence the interest which, in Mr. Rutley's opinion, attached to the "tract lying between Tavistock on the south and Lydford on the north,"² which the first six miles of this new railway traverses. He was especially anxious that palæontological data should be forthcoming, but on that head I regret that there is no new light.

The difficulty experienced in tracing the boundaries here is, as Mr. Teall says, "undoubtedly to be attributed in great

¹ *Quar. Jour. Geo. Soc.* xxiv.

² *Ibid.* xxxvi. "Schistose Volcanic Rocks."

measure to the powerful character of the post-Carboniferous earth movements. These have so masked the original junctions, modified the strike of the earlier rocks, and metamorphosed the sediments, that what appears now as a geological unit may be a complex of different formations."³ I think we shall see that it is.

Dr. Holl carried the Carboniferous boundary immediately south of Tavistock, from the granite a mile north of Sampford Spiney, westward by Tavistock, Stiles Wick, and Hartwell, to Stokeclimsland; and included all the volcanic rocks of the Tavistock and Brent Tor area in that system. All north of this in the Tamar and Tavy area he treated as Carboniferous; all south as Devonian. But whether Mr. Rutley is or is not right in his hypothesis of the connection of the Tavistock and Saltash lavas, we shall find that Dr. Holl is in error in this latter particular, and that we can accept neither his view nor that of Sir Henry de la Beche; while Dr. Holl was equally mistaken in imagining that the local igneous rocks were all of a contemporaneous character.

The new line begins at the joint Lydford Station, on the lower edge of Blackdown, and keeps the Great Western rail close company on the east all the way to Mary Tavy Station. For much of this distance it is really a surface line (both railways follow down the valley-bottom of a little tributary of the Tavy), and there is not much cutting. What there is, with one exception, exposes slates and grit bands, which we can hardly be mistaken in regarding as Carboniferous. In fact upon this point, so far as I am aware, there is no difference of opinion. With the exception noted the volcanic rocks of the Brent Tor series keep to the westward of the stream, though they approach it closely. They are cut, however, near the Brent Tor Station for about 120 yards in length. The exposure is not laid down in the Survey Map.

This section at Brent Tor Station affords admirable examples of the Brent Tor series. The prevailing hues are dark chocolate-brown, and green, and both amygdaloidal and schistose textures are represented. The amygdaloidal varieties or the true lavas are chocolate-brown, and some examples of these take the form of nodules embedded in schistose rock, which is commonly green. Other varieties of the schistose kind are mainly made up of irregular brown and green laminae, with occasional lapilli, and show signs of considerable

³ *British Petrography*, p. 229.

crushing. This is the case also with some of the amygdaloidal rock, in which the kernels have been squeezed into impersistent laminae. The more compact schistose portions appear to have been formed by the consolidation of fine volcanic ejectamenta, such as is frequently associated with lava flows.

One roughly-schistose variety shows shining ovoid patches of green on the dull-brown ground of the faces of the laminae. These patches are a talcose lining to the gas cavities which are now amygdaloids; and are of somewhat frequent occurrence in other portions of the rock. Serpentine is present with talc and chlorite in the green schists, and the brown rock, which is exceptionally heavy, is evidently coloured by iron.

The amygdaloids vary greatly in size, ranging from the hundredth of an inch up to an inch and a quarter in diameter, while irregular fillings occur two inches in long diameter and more. The filling material is commonly calcite, but zeolites, calcedony, and crystalline quartz occur, at times associated. Green earth is also occasionally present, and apparently feldspar.

The important point to note here is one to which attention was called by Dr. Holl, that the immediate Brent Tor area is disturbed by several faults. "These faults carry the country on the east further to the south, or rather south-east, and reverse the dips along the valley of the Tavy, where the beds rise to an anticlinal axis, which crosses the railway in a N.N.E. and S.S.W. direction, midway between Ford Gate and the Mary Tavy railway station."⁴ Mr. Rutley points out that the chief faults of the Mary Tavy basin have a western downthrow, the Tor being on the downcast side, and that to this faulting the preservation of the Tor is due.

Now while the grit bands in the Blackdown beds are characteristic of the Carboniferous rocks in this locality, near Mary Tavy station we get into slate which has a more Devonian facies. Dr. Holl suggested that the band of volcanic rock extending from South Brent Tor to Burn, parallel to the railway, was "the continuation of the Milton Abbot ash-bed faulted off at Burnford Farm, and thrown over to the westward of the anticlinal axis of Blackdown;" so that the undoubtedly Carboniferous rocks of this locality are bounded by members of the volcanic series, whether we call them Devonian or not. In the cutting immediately south-east of Mary Tavy station we find ashy matter with the slates; and a little further on we come to one of the

⁴ *Op. cit.*

most interesting features of the line—an intrusive mass of dolerite, showing well-marked columnar structure. There are two exposures, one of minor importance. The chief is near Burntown. The section at its best was a very fine one, the band being irregularly divided laterally into five or six ranges of columns, dipping twenty to forty degrees to the southward. The columns averaged four to seven feet in length, joint to joint, but varied far more in diameter. Some were as much as three feet on the longest axis. They were, with few exceptions, pentagonal, and many well shaped, but others were most irregular. A fair sample of the larger columns measured 11 inches on two sides, 16 inches on two, and 19 inches on one. Many of the corners were rounded, but the faces were generally clean. When first found, these columns were popularly spoken of as basaltic, from an idea that columnar structure was confined to basaltic rocks. It was at once evident, however, on examination that they were not entitled to that name. Macroscopically, the rock is drab-grey in colour, fairly compact, but with a tendency to scale. When sliced, it proved of so indefinite a character that I gladly availed myself of the kind help which Professor Bonney has always been so ready to give. It turned out to be "one of those abominably-altered dolerites that nature seems to have prepared to bother geologists." Almost all the original constituents are gone to the bad except iron oxide, hematite, and possibly ilmenite; and though plagioclase felspar, and augite appear to have been present, they cannot now be identified. Professor Bonney remarks, "I fancy that the rock has been vesicular, and is now amygdaloidal, the cavities being also filled by miscellaneous secondary products. I think the rock has been holo-crystalline, with ophitic structure. . . . I have little doubt it has been a dolerite, so it is now a kind of diabase. . . . I think I should call it a grey diabase."

In association with the diabase, Burntown yielded a curious mixture, consisting of crystalline quartz, chalybite, mica, a mottled whitish compound of quartz and chalybite, and chlorite. Hematite, and apparently ilmenite, also occurred.

Some of the shale in this cutting contains much quartz, and shows marked signs of alteration.

Near Wringworthy the track crosses the Great-Western line and the stream by a bridge, and after running along the hillsides a space enters a deep cutting through a boss of

igneous rock, which, according to the map, may be regarded as part of a band extending to Mary Tavy, and described as greenstone. This is succeeded by a hard black slaty rock with many quartz veins, irregularly figured black and white, possibly, indeed probably, the result of powerful causes of alteration. The cutting passes out of the hill in ordinary clay slate.

The Wringworthy boss is dark-green, heavy, crystalline, with slickensided joints; mostly massive, but occasionally schistose. A green epidotic mineral occurs in some of the joints and in veins. There are also calcite and iron oxide. Microscopic examination shows this to be one of the altered igneous rocks of the border of the Moor, of which Cocks Tor and White Tor afford typical examples, and which have been commonly classed as gabbros, but have been divided by Mr. Teall into proterobases and epidiorites. Essentially consisting, in the first place, of plagioclase felspar and pyroxene—sometimes diallage, sometimes augite—with ilmenite and magnetite, these rocks are now chiefly characterised by the development of hornblende, at the expense of the less stable pyroxenic constituents. In the Wringworthy example the chief features are lath felspars, and uralitic and actinolitic hornblende. The ilmenite is mainly seen in ragged patches, partly changed into leucoxene. There are some porphyritic felspars; and as granules of augite occur, this special exposure must be classed among the proterobases, but it would require little variation to make it an epidiorite, and it very well serves to illustrate the ease with which one of these forms passes into the other.

Crossing the adjacent valley on a high bank, we come to a long cutting traversing the extension of the mapped Lamerton and Kilworthy volcanic bands. The hill is, however, slate or killas of ordinary type, with a southerly dip, and the igneous rocks are represented by a couple of lava flows, generally five or six feet in thickness, and dipping with the hill. At the northern entrance of the cutting the under flow is seen high up on the right, alone, but it gradually descends as we proceed, and the upper flow then comes in. Some distance further the two meet, but at once separate again, and continue on about five feet each in depth, divided by a broader band of killas. The two appear to terminate at a small fault; and thenceforward there is one only, with a thickness in parts of twelve to fifteen feet. This also declines with the continuation of the cutting, until it passes

out of sight near the southern face of the hill, and clay-slate alone remains.

The upper band is a light-grey rock, weathering rusty brown, with a quasi-granular texture; the lower is a compact, fine-textured, drab-grey rock, spotted with pyrites. The former yields very little information to the microscope, in consequence of the extent to which its original characters have been obscured. There appear to be traces of feldspars, and of a few augite granules, but the most recognizable constituents are the iron oxides, some of which are seen as ragged rod-shaped bodies. The lower band is more communicative, and proves to be a dolerite, which the development of chlorite among other alteration-products has made a diabase. It contains lath and porphyritic feldspars, viridite, pyrites, augite, and a few grains of quartz.

The cutting beyond Wilminston is no doubt through the Carboniferous series. The beds dip southerly at high angles—slates, with quartz veins and thin seams of chert. The killas of the next hill has a different aspect; it is mostly in thin layers, but some is thick-jointed, and there is considerable variation in the dip, though in the main continuing southerly.

This brings us to Indescombe. The cutting here north of the Wallabrook yields igneous rocks with well-marked characteristics—one variety a greenish ash, the other compact, with slickensided joint faces. Only one band is mapped; and the cutting shows that Mr. Rutley was right in the suggestion made in his Survey Memoir on Brent Tor. The belt of greenstone shown from Longford, by Hurdwick and Kilworthy, on to Sowtentown is constricted near Indescombe; and Mr. Rutley noticed that while on the east this band yielded gabbro, on the west it was a volcanic ash—the one an intrusive, and the other an interbedded rock. Not being able to conceive a passage between them, he was disposed to think that the constriction shown might amount to an actual separation of the two; and added, “that they may inosculate seems possible, as the two strips trend in the same east and west direction.”⁵ And this is precisely what we find.

The compact rock is greenish-grey, with some schistose tendency. Certain of the joint faces show chrysotile. Pyrites is prominent. There is no difficulty in deciding its character, for in addition to plagioclase feldspars, pyrites, and serpentine

⁵ *Brent Tor*, p. 16. Some of the Hurdwick rock is, however, a schistose lava.

(an alteration product), we have augite present, both in granules and in plates. The rock is thus an ophitic dolerite.

Mr. Rutley cites two sections of specimens taken by him from points very near the course of the railway here; and there is evidently much variation within comparatively narrow limits.

The first, from Indescombe itself, he describes as "a greenish-grey crystalline rock, containing dark green, imperfectly-developed crystals of a pyroxenic mineral. . . . The component minerals appear under the microscope to be decomposed feldspars (plagioclase), pyroxene (probably augite), some magnetite, and a little quartz. It is a rock closely allied to, if not basalt. If chlorite were present, it might be regarded as diabase."

The other example, taken about half a mile east, is "rather more coarsely crystalline than that occurring at Indescombe, but bears a strong resemblance to it, both in its colour and general aspect." Authorities differed as to whether the pyroxenic constituent was diallage or augite, and whether therefore in the nomenclature employed by Mr. Rutley it was a gabbro or a basalt.

Passing the fine viaduct over the Wallabrook at Two Bridges, we enter a cutting in very hard altered slate or killas, suggesting the contiguity of the igneous rocks which quickly reappear. The first of these is an altered dolerite of the usual type, save that it seems unusually heavy. It is greyish-green in colour, and perhaps may fairly be termed a diabase. Further on, behind Parkwood, at the earthwork commonly called the Roman Camp, we get admirable examples of concentric spheroidal structure, some of the spheroidal masses ranging up to three and four hundred-weight. This exposure yields also fair specimens of asbestos, and exhibits considerable variation in character. In one part there is a much-decayed band, the solid portions of which are a rusty brown rock, in which the forms of crystals of hornblende changed into asbestos are fairly preserved. On the higher part the rock is decomposed to an unusual depth from the surface—20 to 30 feet—into a ferruginous soil. The cuttings at this point are not complete, so that it is hardly safe to assume that igneous rocks continue on. But at Old Wooda the columnar form is assumed for some 16 yards, dipping 45 degrees southerly, by an altered vesicular (?) rock of the doleritic group. Some parts of this exposure are so changed that they may be casually taken for tuffs without

close examination, and the columnar structure is merely a passing phase.

For a short distance beyond this point the line is carried in bank, and the connection is not clear with the next section, which is in a siding cut into the hillside at the entrance of Tavistock station yard. This is noteworthy. Slate of a more usual type is succeeded by a massive, well-jointed blue-black "killas," which abuts against an intrusion of doleritic rock broken by veins of quartz. The junction is faulted; and nipped in between the killas and the dolerite is a wedge of loose-textured grey slate (passing out upwards, but apparently developing in depth), which, if lithological characters are to be trusted, is Devonian. But for this little side cutting into the hill nothing would have been known of this interesting point, and it will serve to indicate the gaps yet left in the story the line has to tell.

Slate rocks continue hence through the Tavistock station, with a general southerly dip. The slate varies in character somewhat, but has generally a Carboniferous aspect. Mr. Rutley mentions the occurrence near the "Cottage Inn," on the Lydford road, of a "black gritty shale, much veined, and containing little cubes of pyrites;" and a rock precisely answering this description occurs at the station. I am not at all sure that it does not contain volcanic material, and that it may not be a finely-comminuted redeposited ash. In addition to the pyrites, it has granules and fragments of quartz and felspar. Except that it is schistose and less compact, this rock has a great resemblance in aspect to the calcareous ash, noted by De la Beche, near the old station, but differs from it in composition in the very material point of the absence of calcareous matter.⁶

The most noteworthy feature here, however, is the intrusion of a mass of dolerite on the brow of the hill immediately above Bannawell Street. It is unmapped, and runs north-east and south-west. Between it and the station buildings the slates are much broken and disturbed, and then highly tilted, with faulting. Next to the dyke is a thin bed of greenish ash, much resembling that of Hurdwick; and a similar rock was exposed in the valley beneath, on the other side of the dyke, in digging foundations for Bannawell viaduct. The dolerite thus seems to have been intruded in the ash. It is much altered, but contains the characteristic lath forms of plagioclase feldspars, pyrites, apparently ilmenite, viridite, and some granular augite, though the pyroxenic

⁶ See *post*.

element has undergone great change. This rock is much like the Wilminston.

The cutting in the hill by Watts's Road, on the other side of the valley, is in Carboniferous shales. Here and there it contains veins of quartz and iron ore—some of the latter beautifully crystallised in quartz cavities and iridescent.

The indications here and at the Great Western Railway station are clear that Tavistock is mainly, though not wholly, on the Culm-measures. Mr. Ussher notes the junction with the Devonian as being marked by a fault (with black mud) in a cutting south of the town. Dr. Holl traced the Carboniferous series with characteristic grit-bands across the Tavy here, the southernmost limit being near Fitzford; and he also noted the important fact that "a little north of the railway (Great Western) station thick bedded grits, dipping north-west, are faulted against a bed of highly-calcareous volcanic ash, dipping in the opposite direction." The slates southward, by Whitchurch, generally undulate at low angles, and seem free from the disturbing influences of the Tavy valley. Query their horizon.

The slates in the cutting south of Tavistock, crossed by the Launceston road, vary in dip from north-east to north-west, but present no peculiarities; they are mostly thick bedded, and grey or brown. In the first field-cutting in the hill opposite Abbotsfield they gradually become more massive, and are jointed into "junks," closely recalling the leading features of the rocks traversed by the Great Western line near Horrabridge. These characteristics are fairly maintained in the sections on to the Crowndale Valley, and they are distinctly Devonian. The prevailing dip here is south-easterly. Some of the slates in this locality have round or oval ferruginous or clayey coats or patches on cleavage faces, the character of which it is difficult to decide. At first they suggested the result of the decomposition of magnetite or other iron oxide; but some of the smaller ones seem associated with traces of organisms, though both fragmentary and obscure. Mr. A. Mitchell kindly called my attention to these markings, which he had observed before I visited the locality.

A point of considerable interest in connection with the more recent geology of this valley is the occurrence in the soil above the first cutting of this series, of boulders and pebbles, ranging up to 15 lbs. in weight—the relics of an early stage in the denuding operations of the Tavy. The

boulders consist of schorl and quartz rock, hornblende-schist, and "gabbro," identical with rocks that occur *in situ* at Peter and Mary Tavy. The special importance of the fact lies in the great height of this deposit above the present level of the river. It occurs at an elevation of 400 feet over Ordnance datum, or practically 250 feet above the river-bed.

Crossing the Crowndale Valley we find a gnarly micaceous slate with quartz eyes, bluish in colour, and identical in general appearance with slates that may be traced from Virtuous Lady Mine to the Morwell Rocks. The pioneer geologists of the West regarded these slates as "transition." Dr. Holl held that there could "be no question about the rocks of Hingston Down and the vicinity of Buckland Monachorum being the lowest" in this district, having been "upraised" between the granite of Dartmoor and the Tamar in the vicinity of Buckland Monachorum, Bereahton, and Roborough Down." In general terms this is a point on which there should be no doubt, and the probability is, that the granite of the one region passes to the other at no considerable depth below.⁷

This is indicated to some extent by the fact that only here are the rocks within our purview traversed by elvans, which are generally indicative of a near approach to the granite laterally or in depth. It is also indicated, as we shall see hereafter, by the character of these elvans.

Just beyond the junction of the Lumber brook with the Tavy the line cuts through the Shillamill elvan, which has a general east and west direction. This is a singularly interesting section, from the great range of character exhibited. In the centre the elvan is granitoid and porphyritic, much resembling the Grenofen; other parts are more even-grained and felspathic, and the outer portions more quartzose. Different examples from this one dyke might well be taken to represent half a dozen different felsites, varying in texture as described, and in colour from warm buff through shades of brown and cream colour to plain grey and greenish-grey. Various sections show the differences to be mainly dependent on the physical condition of the ground-mass. In one variety the felsitic base is fairly sprinkled with even-sized granules of quartz; while the same mineral is porphyritically

⁷ The contiguity of granite underground, not far distant, at Devon Consols, is very well shown by the altered talcose slate with its andalusite crystals, which the miners call "lousy killas."

developed, with feldspars which are partially kaolinised. Mica occurs porphyritically and in tufted scaly clusters here and there in the base. A vein of quartz and green hornblende traverses the slide. Another variety is more quartzose and crystalline, but less porphyritic, and appears to contain a little plagioclase; mica is also more generally diffused. A third is less differentiated, and has a more muddled aspect, though mica and quartz are more generally exhibited. A fourth has an even-textured ground-mass than either of the others, and is more definitely crystalline. Green pseudomorphs, after porphyritic feldspars, appear to be partially chlorite and partly hornblende.

Touching the Shillamill elvan as seen in an adjacent quarry, Mr. Rutley writes: "On the south side of the quarry the rock is of a dark grey colour, with irregular dark greenish-black patches imbedded in the grey, granular, felsitic matrix; but farther to the north of the quarry it becomes a quartzose feldspar-porphry of the usual elvanitic type. In places the rock contains a little pyrites or mispickel, and also specks of copper pyrites and some chlorite." He likewise describes three sections as differing greatly in their external aspect, but identical in their original composition. A light porphyritic variety shows the components to be "orthoclase mainly decomposed, quartz, and magnesian mica. The matrix is felsitic; crystals of magnesian mica are in places seen to lie within the crystals of orthoclase, and also a few crystals of quartz. . . . Crystals of magnesian mica are to be seen lying within quartz crystals. From this it would appear that the mica was the mineral which first crystallised."⁸ In a section of a dark compact variety "magnesian mica lies within the quartz crystals. The feldspar is in all cases converted into felsitic matter. . . . In some instances quartz appears to be pseudomorphous after feldspars." The third variety is chiefly marked by a different change in the feldspars, which are kaolinised in the first, changed into felsitic matter in the second, and in the third "replaced partly by a micaceous mineral, now greatly decomposed, and probably represented by limonite and partly by felsitic matter." The new sections carry these variations still further.

Following along the hillside the Shillamill Tunnel is quickly reached. This penetrates the lowest rocks, probably,

⁸ *Brent Tor*, pp. 24, 25, 41, 42.

cut on the railway. It is 600 yards in length, and is for the most part through slate, varied in texture, much disturbed, and traversed by a copper lode. Some of the slate is peculiar—a light-grey, soft, talcose material, which splinters and powders easily. The only points at which I have met with rock of similar character in South Devon are in superior contiguity to the granite, as at Crownhill, and near Yeoland Consols; but some of the “lousy killas” from Devon Consols has much the same general aspect, apart from the crystal development.

The leading feature in this tunnel is, however, that it cuts the continuation of the Grenofen elvan. This was first met in the roof of the tunnel, 8 chains 44 feet in from the Devonport or southern end, and was lost in the bottom at 11 chains 28 feet.⁹ It underlies, however, considerably to the northward, and its width may be put at 40 yards. The point to be noted is, that this elvan, which at Grenofen is porphyritic, with a little interstitial felsitic matter, is here in depth, nearer its source, more distinctly granitic, and in fact is essentially a loose-textured decomposed granite. Some of the slate next the elvan is very hard and quartzose.

The cutting of the Morwell Down tunnel of the Tavistock Canal, according to the details given to the Geological Society by Mr. J. Taylor,¹ if the nomenclature is accepted in the modern sense, shows either that there are more elvans in the rocks there than are found on the railway to the east, or that our two main elvan courses are divided into branches. But if we group these details, it seems probable that whatever local variation there may be, and whatever confusion of nomenclature or identification is suggested, we are practically dealing with two elvan systems only.

Going from north to south the tunnel first traverses 622 yards of killas or clay-slate; then 156 yards grouped as—elvan, chlorite, and quartz, 22; killas, 46; growan, clay porphyry, 12; killas, 24; growan, 52: then 872 yards of killas: then 54 yards grouped as—elvan, 30; killas, 6; growan, 14; elvan, quartz granular and crystalline, 24: finally 816 yards of killas.

On the assumption that we have here two elvan systems, the growan being as distinctly a granitoid rock as the ordinary elvan, and exhibiting no greater change of character than is often seen in one elvan course, there is in the one instance

⁹ I am greatly indebted for this, and for much other valuable information, to the ready courtesy of Mr. W. W. Szlumper, engineer of the line.

¹ *Trans. Geo. Soc.* iv. 1817.

seventy yards of intercalated killas to account for, but in the other only six. If this rock is rightly described as killas, then it seems to me the more reasonable hypothesis that the northern elvan branches; in the southern there may be simply an inclusion. I am not at all sure, however, that killas may not have been used in a vague way which might cover a modification of the elvan itself. The rocks described distinctly as elvan in the canal tunnel would not of themselves make up the thickness of the two elvan courses as cut through on the railway.

From the Shillamill tunnel the line continues along the valley of the Tavy at a considerable elevation, chiefly through a series of cuttings in slates closely resembling in massiveness and jointing those further east on the Great Western Tavistock line. No doubt they are a part of the same series. The dips first vary from southerly to northerly; then we find the face of the hill full of contortions. The rocks have evidently been subjected to enormous pressure, and are crumpled and waved in all directions. They also contain numerous quartz eyes—of secondary formation.

The difference between these rocks and the reddish-tinged evenly-bedded slates in the next cutting, which dip south at low angles, is very marked. Here the line leaves the valley of the Tavy, and crosses Morwell Down to that of the Tamar. The Hocklake cutting, next in order, traverses a lode system laid down on the Survey Map by Sir Warington Smith. Two lodes meet near the point of intersection. They are the ordinary east and west lodes, but the southernmost of the two has a southward trend at the fork, which was somewhat deceptive. Where cut they are composed of massive quartz containing some pyrites.

To this succeeds a cutting through splintery rotten slate, with regular dip, which carries us over the summit of the Down, and is followed by a shallow section in the side of the hill overlooking the Tamar. Here the slate contains thin layers of quartz dipping westward, and cut off by fault.

From this point to near Berealston the line traverses nothing but slates of varied character, generally classable as killas, and with varying dips. The colours range from grey-green and blue to drab and reddish, the textures from massive to splintery; and nothing but the most careful survey, when the whole of the excavation is finished, can give any satisfactory conclusions. The general aspect is, however, Devonian.

A cutting near Halson opens in massive reddish slate, dipping at high angles west. Beds which are nearly horizontal succeed, and they are followed by others dipping southerly. The central division is occupied by slates of ordinary character; but at the further end there is a ferruginous splintery shale, with seams of whitish clay.

The most important section on this part of the line is the cutting at Gold-Street Farm, where Mr. Ussher was fortunate enough to discover and identify a mass of grey Culm-measure sandstones and slates faulted down in the Devonians.² The Carboniferous rocks consist of grey sandstones with shales and slaty beds, and they are faulted against greenish Devonian shales with a characteristic igneous rock—a greenish-grey amygdaloidal lava, the cavities filled with silicious matter.

There occurs here also a fair example of a rock not elsewhere represented in the district—a mica-trap or lamprophyre. It consists of nearly equal proportions of a cream-coloured felspar and a dark mica, irregularly mixed, with an occasional grain of quartz. Probably it is an extreme local phase of dolerite; for a variety of dolerite closely resembling it is found at Ernesettle, on the south; and at Weard, on the west, a pink felspathic doleritic vein curiously simulates syenite.³

The cuttings in the Bere promontory are even for this line exceptionally heavy. Berealston cutting is 75 feet in depth, and contains among the slates a decomposed dyke of igneous rock following the general east and west trend of the neighbourhood. It is a coarse-grained compound of pink felspar, and what seems a chloritic replacement of augite.

Near Bereferrers we get the ordinary drab slate; but the chief cutting between Bereferrers and the Tavy begins in drab slate, and passes to hard blue massive slate, with quartz veins and segregations, some highly crystalline—also calcite. Much of the rock here is thick-bedded and imperfectly cleaved. There is great contortion and some faulting. At one spot beds dipping at a low angle east, and then undulated, suddenly become vertical. Some of the vertical beds strike south-east. At no point of the line, not even excepting that in the valley of the Tavy near Virtuous Lady Mine, is

² Dr. Holl identified Culm-measure patches further west at St. Mellion.

³ A syenite occurs at no very great distance. I have found fragments, though not *in situ*, of what is apparently a syenitic vein in Devonian strata at Mount Edgcumbe—mainly reddish felspar, with a little quartz, and a small but marked proportion of hornblende.

disturbance without the actual presence of a disturbing cause so strongly marked. Further up the Tavy valley, near Milton Coombe and Lophill, while the slates have a prevailing southerly dip, the dips vary considerably in amount, and have a wide range of deviation east and west, so that these disturbances are not purely local. Probably we have here a centre of special stress during the great earth movements that gave this district its main features of configuration.

The cutting passes out in ordinary drab slate, and the next is through a still looser drab shillet, but it is shallow. These drab slates are evidently weathered and changed by surface percolation.

I am indebted to Mr. Henry Clark, under whose direction the bridge over the river Tavy, and that over the Tamerton Creek, have been carried forward, for valuable details concerning the beds of these two channels.

The width of the waterway in the Tavy at high-water springs is nearly 500 yards, of which the deeper portion, or what may be regarded as the channel proper, is about 300. The rock on each shore is a loose-textured purplish shale or "shillet," and there seems reason to believe that this is fairly, if not wholly, continuous. The river-bed is filled up to within a general average of some 20 feet of high-tide level with mud, intermixed at the surface with irregular beds and lenticles of sand, three to four feet deep. Nearly the whole of this surface is laid bare at low tide, leaving a narrow passage for the river water, nearer the Warleigh than the Bere side.

The approaches to the viaduct proper are in masonry arches, the foundations being laid on shallow slopes of slate rock on either side of the main channel. The piers of the bridge itself have been formed by sinking iron cylinders to the bed rock, removing the mud, sand, and gravel from within, and then filling with concrete. In carrying out this work the contour of the bottom has been accurately ascertained.

For about fifty yards from the Bere shore the rock slopes gradually, until it reaches a depth of some 18 feet below high-water springs. It there makes a sudden descent, so that within another thirty yards a depth of 80 feet is reached, which is the deepest point. Then for a hundred yards the depth does not vary much, but it gradually lessens towards the Warleigh end, though for nearly another 200 yards a depth exceeding 50 feet is maintained. Thence

the rise of the bottom is more rapid. The shore shallow begins at a distance of 120 yards from the Warleigh end, from which point to the bank the depth is under 25 feet. The mud and associated deposits have a maximum depth of 75 feet.

The surface beds of sand already alluded to excepted, nothing but mud was met with in sinking the cylinders until near the bed-rock, which was found to be covered to a depth of two feet, ranging in parts up to four feet, with a layer of boulders and gravel in hard yellow clay.

This bed-rock, as already noted, consists mainly, if not wholly, of a purplish shale, well jointed and closely cleaved, the cleavage faces being finely wrinkled. Another example of rock from the bottom of one of the cylinders, but which it is impossible to pronounce definitely *in situ*, is a hard, close-grained, grey, micaceous sandstone, with ferruginous joints. This is traversed by transverse parallel veins in two groups, which may represent bedding-planes, but are quartzose.

Among the rocks in the bottom deposit, I have had examples of the following, mostly from boulders:

(1) Uneven-coloured drab and warm-grey granite, with porphyritic feldspars, schorl, and apparently a little hornblende.

(2) Water-worn fragment of elvan, dark-grey on the exterior, with reddish-brown centre. Matrix chiefly felspathic, with porphyritic feldspars, pyrites, a little quartz and hornblende, but no visible mica. Looks like a fragment of a very thin dyke or vein.

(3) Warm light-brown elvan, matrix sub-vitreous, with porphyritic feldspars, some kaolinised, a little quartz, black mica, and hornblende.

The recurrence of hornblende in each of these examples is interesting and significant.

(4) There are also a fragment of "gabbro" of the Horndon type (fifteen miles up the course of the river); (5) pieces of quartz veinstone; and (6) of gnarled slate, with quartz eyes invested by metallic-lustred talcose coatings.

On the shores of the Tamar, south of the Tavy, coralline limestone occurs among the slates, and may be recognised at a distance by the difference in the character and dip and strike of the beds. On either side there are greenish and red slates, against which, Mr. Ussher suggests, the limestone (as observed by him west of the river on the opposite shore) is probably faulted. This limestone is no doubt the same

that occurs at Moditonham, where it used to be worked for lime.

The cutting across Warleigh Point is, however, wholly through slate. Olive-drab gives place to blackish, succeeded by a bluish-grey, which somewhat resembles in appearance that at Shillamill tunnel, but is not so friable. Solider rock of the ordinary cleaved killas type succeeds, and the prevalent southerly dip continues.

Tamerton Creek is crossed by a bridge starting from banks on each side. The bed of the creek is shillet or shaly rock, covered by mud in some parts to a depth of over 30 feet. At low water the whole of this mud is left bare, with the exception of a narrow waterway 40 feet wide, and at the most five feet deep. As in the Tavy, the rock has been excavated most deeply nearest the northern bank, and rises most gradually towards the south.

The cutting through the high land of the headland south of Tamerton Creek traverses a long series of red and green slates, intermixed with drab and lead colour, with apparently sundry repetitions.

The earlier dips are mostly to the south-east, but there is some disturbance and crushing, and north-easterly dips speedily succeed. Some of the slate rock is thickly jointed and much broken by quartz-veins, which carry with them at times a noteworthy proportion of chloritic associates. These quartzose portions here, as elsewhere, afford excellent indices of the extent to which the rock has been crushed and contorted, the quartz having been developed along the lines of fracture; and in the opened folds some of the quartz eyes give fine examples of what may be called concentric brecciation, and are strongly slickensided. At times the veins contain specks of galena, copper ore, and mundic.

This section is calculated to raise grave doubts as to some of the identification of the bedding. During its progress, what appeared to be joint faces were exposed, running generally north and south, but they might have been equally regarded as bedding planes.

Professor Phillips, in his *Palæozoic Fossils of Cornwall, Devon, and West Somerset* notices the existence of an anticlinal near Whitleigh, between Tamerton Folliott and St. Bude; and this anticlinal the cutting next traverses. As we approach the axis there is some undulation, next the dip of the purple slates swings round to the south, and then with some contortion and crushing we get the normal

southerly dip of the district, which becomes continuous for the section, sometimes tending more to the east and sometimes to the west.

A careful study of this cutting will show how little reliance can be placed upon mere surface observations in these disturbed slates. A hundred yards will yield illustrations of dips to every quarter of the compass, and of almost any amount; and yet, a little deeper, the general run of the rocks may be clear enough.

There is another section on this axis two miles to the eastward, where the road to Tamerton Foliot has been carried in a deep cutting by Old Wheal Whitleigh.

Here, so far as lithological characters go, both Carboniferous and Devonian slates may be represented. There is a massive badly-cleaved quartzose slate, dipping 45° south-west; a massive well-jointed drab slate, nearly horizontal; some ferruginous slate; and some black rotten slate. The southerly dips are at the southern end of the cutting; at the northern end the dip is north-west.

Following these beds along their strike, as well as may be, by the road behind Whitleigh, we get purple and green slates (which become characteristics members of the series further south), then talcose and quartzose slates, and further on purple slate on the crest of the anticlinal. The railway section therefore is fairly characteristic of the rocks for some distance.

From the Tamerton Creek or Butshead cutting the line is carried along the reclaimed flat of Ernesettle until it reaches the point immediately north of the Albert Bridge. This is composed of a hard, compact, closely-jointed olive-grey slate, dipping at a very high angle southward, and in parts vertical. Further in the hill the olive tint becomes stronger, and some portions of the rock are distinctly green. This hill is intersected by a dyke of dolerite, which crops out on the beach beneath, where it seemed to have indurated the slaty rock in contiguity. The railway section shows, however, that the induration is too extensive and pronounced to be due to this cause; and on further investigation we are led to the conclusion that these olive slaty rocks are of igneous origin, and have been subjected to dynamic metamorphism of a very marked kind, which has almost wholly obscured their original characters. The bulk appear to have been originally a very fine-grained volcanic dust or ash, but

there are traces of tufaceous bands, of finely vesicular lava flows, and further east at St. Bude they contain recognizable lapilli. There is no locality in the neighbourhood where our volcanic rocks are so much altered, and the extreme form of metamorphosis which they have undergone affords strong contrast to the little-changed ash beds of the Tavistock area; and yet, curiously enough, throughout all they have retained much of the irregular jointing so characteristic of rocks of igneous origin.

The doleritic dyke is about ten yards in diameter, and is bounded on each side by a fault partly filled by brecciated material and partly by more recognisable tuffs. It is decayed more or less throughout the exposure to a dark rusty-brown, and its most interesting feature is the development of spheroidal forms in masses from an inch or two in diameter to pseudo-boulders bigger than a man's head. Some of these are noteworthy examples of concentric structure; and one in my possession, about $2\frac{1}{2}$ inches in diameter, has certainly five and twenty concentric layers folding round the nucleus. This dolerite is largely felspathic, and in its unweathered portions prominently crystalline. It contains plagioclase feldspars, mica, augite, viridite, apatite, and ilmenite, and has been described by Mr. Teall as an "ophitic mica-bearing diabase containing much apatite"—the abundance of apatite in the dolerites of this group (chiefly west of the Tamar) being a noteworthy feature. These dolerites, by the way, are as a rule much "fresher" than those of the Tavistock district; and are commonly differentiated also by the presence of mica.

The railway section throws no light on the question, whether we are to regard as part of this dyke or associated with it a boss of felspathic rock at St. Bude, first described by Mr. John Prideaux as a felspathic rock with needles of schorl, and accepted by me as such. The spiculæ are much decayed, however, and I am not sure that they do not represent hornblende. Perhaps a fresher example may some day turn up. Meanwhile the rock has certainly a granitoid character in its development of well-charactered twinned crystals of orthoclase.

The cutting at Saltash Passage, which comes next in order, is of exceptional interest. Three bands of igneous rock are shown on the map traversing its line, and a fourth as approaching it; but this does not represent the full facts, which indeed only an excavation of such magnitude could

reveal. The cutting is mainly through slates—dark-brown, blue, and grey (black near intrusions), in part ferruginous, and associated with both interbedded and intrusive rocks of volcanic origin. The general dip is southerly, and there is much local disturbance.

The first appearance of igneous rock in the section from the north was a striking band of massive felstone, dipping at a high angle, with a curiously-rippled face. This is a typical tuff, with fragments of lava and broken crystals in a matrix of fine sediment, forming a network; and if the ripple mark was what it seemed to be, then here, at any rate, bedding and cleavage practically coincided.

A short distance beyond this was a distinctly-intrusive white rock of peculiar character, unlike any other in the district. It was first cut into as a boss, but as the excavation progressed veins, thrown off from the central mass, only were left. All round this intrusion the slates were much disturbed, crushed, crumpled, and blackened. There were also veins of white quartz; and at one spot a mass of very hard granular, pinkish rock occurred, which, by the pink veins traceable when I first saw this section, seems to have been a mass of granular felspar.⁴

The white rock is veined by steatite, and has the same mineral on the joint faces, and its general character seemed that of a potstone. It turned out, however, to be a much-altered amygdaloidal lava. Spots of galena, chalcopyrite, and mundic were visible in the adjacent rocks, and pyrites in the rock itself.

Still further south a dome-like mass of intrusive lava was met with—dark greyish-blue and amygdaloidal. Over and round this hard, compact, blackened slates, converted into an investment allied to Lydian stone, closely mantled; but at a short distance above and on either side the normal strike and dip continued. Here also there was much crushing. This intrusion seems to be on the line of the band mapped as extending from near the Passage to Honicknowle, where trappean rock is largely quarried for road metal. Rock of precisely similar character occurs at Honicknowle, and the slates there are similarly affected by its intrusion.

Hard blue slate, so massive as to be a useful building stone, is found further on; and towards the end of the cutting the slates give place to a thin band of interbedded

⁴ Unfortunately nearly all the characteristic features of this cutting have been worked away. At many points on the line the sections here described are no longer what they were when visited first.

vesicular lava and ash beds, of the ordinary "dunstone" or "schalstein" type, including a well-charactered tuff, made up mainly of broken felspar crystals with slaty matter, giving a fresh face an evenly-speckled aspect.

Black slate is intermixed with the customary drab in the cutting where the road branches off to Bull Point, and hard by is purple, but not in quantity.⁵

The line is carried in cutting through the point of high land between the Saltash Road and the Weston Mill Lake, and traverses bands of igneous rocks, which have been quarried for "metal" by the side of the road below.

The prevailing colour of all the rocks in this cutting is a warm ochry-drab or brown. There are three narrow dykes or indentifiable bands of igneous rock, running east and west—so similar in character that they are certainly part of the same series, if not repetitive—cut off from the slates by vertical faces, or inclined at very high angles. These dykes are partly schistose, partly massive and jointed. The middle one appeared to indicate an approach to semi-spheroidal structure, being divided vertically by parallel master joints, and then into terminally-curved layers approximating the cleavage planes. Some of these layers were compact throughout, but others seemed to graduate into ashy matter, which was, however, the result of the decomposition of the more solid felstone. It is not easy to decide whether these dykes are interbedded or intrusive from their general aspect, but when they are examined under the microscope they turn out in the main to be ashes rather than tuffs, highly altered, but still retaining shadowy features of their original fragmental structure, with wavy and impersistent brown strings running laterally through them, giving the appearance of fluxion. In parts they enclose small slaty patches—a characteristic of some tuffs at Crabtree, near Plymouth.

There also occurs here what may be described as a granular schistose tuff—the distinctly fragmental matters in which are disposed between irregular plates or films of talcose matter, some of which has a greenish hue, and is translucent.

Yet another fragmental form is an agglomerate—small bits of rock, some pebbly, others flat, but all with the edges more or less rounded, in a friable base. It has been subjected to considerable pressure, and belongs to the original series,

⁵ A toad brought down with the *débris* here while blasting was said by the "navvie" to have been found in the solid rock—said rock at the point in question being a schistose lava!

for one of the joint faces, which is ferruginous, is slickensided. The character of the fragmental matter is not quite clear, but the bulk of it, at any rate, may be pronounced as of igneous origin.

The line is carried across the Weston Mill Lake mainly by embankment. The mud here is of very great depth, and large quantities of the "spoil" have sunk into it, forcing up the silt on either side.

From the creek to the spot where the line crosses the Saltash turnpike the cutting is wholly in slate. Quartz veins and eyes occur at various points, and here and there small thrust faults; slickensides are frequent. We meet also with the purple and green slates. I have no doubt that these coloured slates are repetitions of one band, but they seem to be repeated in major folds as groups, as well as more individually in minor plications.

The long cutting at Ford is hardly less interesting than that at Saltash Passage. It commences in drab slate, dipping a little west of south, but disturbed in places. Black slate follows, and this becomes quartz-veined. Hard blue slate succeeds, fine-grained and compact, which behind the Devonport Workhouse dips southerly at an angle of 55° . In the upper part of the cutting, as at the commencement, the slates are mostly drab, changing more or less suddenly to the darker shades; and this surface action extends to a depth of about twenty feet.

Beyond the blue slates igneous rocks again appear, the first indication being an intrusive wedge of lava-breccia thrust up into the slate at an angle corresponding roughly with the dip, and with an investment of a thin crust of altered slate. This lava-breccia is yellowish-grey, composed of fragments of volcanic rock of various sizes set in a matrix of finer material, apparently of the same description, with slaty particles. I can imagine such a rock being formed by powerful intermittent intrusive action.

It is succeeded almost immediately by the ordinary interbedded volcanic or "schalstein" series, in which massive porphyritic-felspar lava, vesicular and amygdaloidal lava, and tuffs, are alternated with slaty beds; the last, no doubt, in part simply cleaved portions of the igneous members. These rocks are much decomposed, with great development of loose ferruginous matter. Much steatite is seen on joint faces and in veins.

The lava-breccia comes in at various points in little bosses. It is a peculiar rock, and occurs nowhere else in the locality. There is also a grey amygdaloidal lava which seems of the same composition.

These igneous rocks continue to the northern end of the viaduct across what was formerly the Keyham Lake. At the southern we get the purple and green slates again, associated with drab slates containing quartz veins. There is disturbance here, too, and at one point the slates are traversed by thin beds of hard rock, which at first sight suggest a compact lava. They are, however, quartzose, and are really highly altered grits, representing layers of fine sediment of quartz and felspar, and some opaque mineral, which has a fancy for segregation. The grains are rather ovoid than spherical, and are little worn, many being angular, and several with a ragged outline. There are casual occurrences of this rock in slates near Bere, and it evidently represents layers and patches of sand among the prevailing silts.

From this point the line proceeds mainly in tunnel to the Devonport Station. There is one open cutting which exposes drab iron-jointed slates; but the red and green slates occur at various points, and are last met with towards the southern end of the Devonport Park section of the tunnel.

We may sum up these observations generally as follows:

I.

A. The line is carried through a great series of slate rocks differing much in character, almost wholly unfossiliferous, and with a prevailing, though by no means universal, southerly dip.

B. These slates contain interbedded lavas, ashes, and tuffs at various points, and are traversed in the same areas by dolerites; while intrusive volcanic rocks are also found.

C. Grit beds and chert occur occasionally.

D. Quartz veins are common in certain localities, and are specially prominent where there is contortion.

E. In one area the slates are traversed by elvans, and metallic lodes also occur.

II.

We may group these rocks in the following natural divisions:

1. The slates and grit bands beyond the interbedded lavas, near Brent Tor Station, to Mary Tavy. These are

free from igneous association on the track of the line, and are undoubtedly Carboniferous.

2. The slates with their interbedded and intrusive igneous rocks from Mary Tavy to Tavistock. These, as it seems to me, while partly Carboniferous, are in all likelihood also partly Devonian. There are no fossils to help us; and with the exception of chert bands in the cutting near Wilminston and the characteristic grit seams at Tavistock there is little evidence in the sedimentary lithological direction. But the igneous members of the series seem to afford some clue. If the suggestion is right that the interbedded lavas, ashes, and tuffs of this district are identical with those that appear in the Devonians near Plymouth and elsewhere in South Devon in rocks of similar age (and physically they are in many instances indistinguishable)—then we must rank the slates of this volcanic group Devonian also, and account for the present intimate association of Devonian and Carboniferous rocks near Tavistock by the complicated plications consequent on the formation and upheaval of the Dartmoor granite, lifting and thrusting rocks which had already been seriously disturbed by the intrusion of the gabbros (now epidiorites) on the borders of the Moor, and the associated dolerites. This is of course hypothetical; and if the point is to be definitely solved by observation, it can only be done by the most careful and detailed survey, with the ever present possibility that the key or keys may lie in areas of which no section is available.

In this connection it seems to me worth considering whether it is probable that the conditions which must have governed the production of the interbedded volcanic rocks in the Devonian slates near Plymouth could have been so exactly reproduced in the Culm-measure era, as they were if the lavas, ashes, and tuffs of the Tavistock area are of Carboniferous date. It is of course possible, but I hardly think it likely. These Devonian rocks point to the existence of volcanic activity over a very lengthened period, adjacent to a shallow sea, into which the lava flowed which was disintegrated to form the tuffs, and in which the finer sediments—volcanic dust and sub-aërial detritus—were thrown down, until the gradually-raised sea bottom became the foundation of limestone reefs. Then came a period of at least comparative rest, during which these strata were brought to the surface, to be depressed again beneath the waters of the Carboniferous sea. This whole process must have been repeated in close detail, if the Tavistock volcanic series is

distinct from the Plymouth—the one Devonian and the other Carboniferous. It seems more reasonable, in the absence of direct evidence to the contrary, to believe that the Carboniferous period is represented with us by grits and shales, until the later day when another earth movement was followed by the intrusion of those gabbros and dolerites which we find traversing the sedimentary and volcanic interbedded rocks alike.

3. From Tavistock to near Berealston the rocks appear to be wholly Devonian, the lowest beds exposed on the line being brought up in the lap of granite connecting Dartmoor at Walkhampton with Kit Hill and Hingston Down, between which the Grenofen, Shillamill, and Morwell elvans form an almost continuous link. There is no instance, that I am aware, in South Devon of elvans occurring in other than Devonian rocks. Elvan-bearing rocks may thus be claimed as characteristically Devonian, and among the lower members of the local series. The southernmost elvan is at Cann Quarry, near Plym Bridge; but the Roborough elvan crosses the Tavy at Lophill, within a mile and a half of Bereferrers; and there is no evidence of any but Devonian rocks on the Tavy from Tavistock to its junction with the Tamar.

4. From Berealston to Tamerton Creek we are on somewhat debateable ground. It is quite certain that both Devonian and Carboniferous rocks occur, but their general boundaries are not clear. Mr. Ussher has fortunately worked out the faulted-down Culm-measure shales and grits of the Gold-Street Farm cutting, hitherto wholly unsuspected. And here, too, it is significant that we come again on the "schalstein" series, though immediately after, as it appears to me, we are among the lower beds of the Middle Devonian. I do not, however, feel sure of the horizon of the Tamar limestone. The purple and green slates exposed on the anticlinal to the south in bulk underlie the great Plymouth limestone, and limestones do occur here and there far away from the main mass.

5. From Tamerton Creek on we have a set of rocks corresponding remarkably in leading features with those between Mary Tavy and Tavistock, but at the same time with some important differences. In both we have a great slaty series containing interbedded volcanic rocks, and with intrusive dolerites, though the Plymouth dolerites are fresher than the Tavistock, and have no associated gabbros or epidiorites. But it must be remembered that they are removed from the great intrusive centre of Dartmoor. Near Plymouth there

are no positively identifiable Carboniferous rocks, though their presence is possible. We have the purple and green slates, which may be traced at many points in South Devon and East Cornwall. And we have also what was unsuspected before the line was cut, intrusive volcanic rocks later than the "schalsteins." This seems to indicate the existence of a period of igneous action hitherto unrecognised in South Devon; unless we are able to associate these intrusions with the so-called Triassic outbursts, of which an example occurs on the east of Plymouth Sound. The plications near Plymouth seem to be at once more complex and more local; and I have been led to attribute this to the resistance afforded to the Dartmoor thrust by the great buttress of Archæan rock now represented in remnant by the Eddystone reef.

III.

The one great characteristic feature of the series is the almost entire absence of fossils along the whole route—a fact so strange as to be wholly inexplicable on the hypothesis of anything like a regular succession. And even when we lessen the time required for the formation of this enormous body of rocks by calling in the aid of repetition, the existence over the shortest assignable period of such all-but-lifeless seas is startling. However, life was by no means wholly absent, though it was greatly localised. Traces of crinoids, as we have seen, do occur among the slates here and there; and the cast of a mollusc of large size has been found in tuff at Honicknowle. The probability seems to be that the lowest rocks of the series were formed in very deep water, and that such traces of life as they once contained have been greatly obscured—in fact, all but obliterated—by subsequent changes. For the rest, the existence of continuing, though intermittently operating, volcanic forces, must have been fatal to life near the centres of activity.

I hardly think it wise to venture an opinion as to the proportion between the actual and apparent thickness of the rocks under review. The bedding is not always clear, the evidence is imperfect, and we have to deal not merely with major, but with minor folds. Dr. Holl suggested some half-dozen between Stowford and Mill Hill, varying widely in sharpness and breadth.

But I may just note the fact—passing by the middle section—that from the Tavy to Plymouth there is some evidence of sixfold repetition: in the recurrence of purple

slates in the bed of the Tavy; at Butshead, on the south of Tamerton Creek; near Bull Point; in the cutting east of Weston Mill Creek; at Haddington Road, Stoke; in the Devonport Tunnel: and in the presence of volcanic rocks of the "schalstein" series (beyond the small exposure faulted against the Culm-measures at Gold-Street Farm,) at Ernesettle; the Albert Bridge; the southern end of the Saltash Passage cutting; Camel's Head cutting; at Ford; and again south of the Devonport tunnel next the limestone. The character of the folding, and the extent of denudation, would account for the wide variations in the breadth and importance of these exposures; and where these rocks run in groups (as the tuffs in the Camel's Head cutting), we may be dealing also with minor plications. But when we find in a space of little over four miles a sixfold repetition of this sort—duplicated, and with some approach to regularity of interval—it is perfectly safe to assume that the apparent thickness is enormously less than the real; and that instead of being (allowing for dip in the section of the country now under consideration) about 6000 yards, it really does not reach 1000. The application of the same method at the Tavistock end, which I suggest as in part repetitive of the Plymouth, and in the central section, would bring the South Devon Devonians into reasonable compass.

As a record of observed facts, I trust that this paper may be of some use. For the rest, it has no claim to be other than suggestive. The man who will finally unravel this tangled geological skein must have more spare time, and more of the critico-imaginative faculty, than I possess.

In conclusion, I most heartily thank Messrs. Relf and Pethick, the contractors, for facilities kindly afforded.

THE DUCHY OF CORNWALL ON DARTMOOR.

BY W. F. COLLIER.

(Read at Tavistock, August, 1889.)

In the year 1887, when the Devonshire Association met at Plympton, I read a paper on "The Venville Rights on Dartmoor," and I now propose at Tavistock to pursue the same subject from the different point of view presented by the rights of the Duchy of Cornwall.

To make the matter clear, I must repeat what I before said—that Dartmoor was originally a forest; and that a forest is a tract of land, with or without trees, over which the king follows the chase, the chase in early days meaning nearly always the chase of the red deer, a very fine animal indigenous to Britain.

From the earliest days there is evidence that the primitive inhabitants of Britain, including the cave-men, hunted the red deer, and used his flesh for food, his horns and bones for instruments, and his skin for clothing, when they had any, long before the fiery Celt troubled the land.

To avoid details I need only remind you that in course of time the forest of Dartmoor was granted, with rights of chase, to subjects of the king, when it became, according to law, a chase, and not a forest. The forest laws were in force in a forest to protect the king's deer. On a forest becoming a chase by grant to a subject the forest laws ceased to operate, and the common laws of the land took their place.

In the time of Edward the Black Prince this forest was granted to him as Duke of Cornwall, by charter dated the 17th of March, 1336, creating the Duchy of Cornwall, 553 years ago, and has been held by the Dukes of Cornwall, Princes of Wales, ever since. As it is held by a subject—a very important fact—it is a chase; but we call it a forest

according to ancient custom, and there are forest rights attached to it.

I need not trouble you with any forest law, nor with any of the confused and complicated mass of the land laws, piled up one upon another by the astonishing ingenuity of man. We will try to get on with a little common-sense, if there is such a thing, which by-the-bye has been doubted.

The forest of Dartmoor consists of those parts of the Moor that lie within the boundaries set forth in the Perambulations, the earliest of which I believe was made about the 13th of June, 1240, just 650 years ago. In the reign of King John the whole of Devonshire was disafforested, the county having been before that subject to the forest laws; and there can hardly be a doubt that the Devonshire commons which now surround the forest were originally parts of the forest. When King John disafforested Devonshire, Dartmoor and Exmoor were specially reserved by him as forests. The Devonshire commons were then purlieus of the forest. The purlieus are lands contiguous to a forest, and the term has an exclusively forest meaning, on which the forest laws for the protection of the deer can be put in force, though in other respects they are outside the forest. The Devonshire commons being purlieus of the forest, the Duchy has a right to exercise, and always has exercised, certain forest rights over them. For the sake of brevity the word Duchy will be understood to stand for the rights of the Duchy of Cornwall on Dartmoor forest and its purlieus.

When the forest was granted to the Duke of Cornwall, and became a chase, it was granted as a chase, and not a manor. It was Dartmoor chase or forest, not Lydford manor; and by the charter granting the forest all the rights and privileges that had been enjoyed for centuries by the people living round the forest and its purlieus were specially reserved and confirmed to them. They have a right to take anything from the forest that may do them good, except green oak and venison, or more properly vert and venison, vert being a forest term for the trees and underwood on which the deer browsed. There cannot be a doubt that for a great number of years Dartmoor was held by the Duchy as a chase, with the rights on the side of the Duchy as the owner of a chase, but on the side of the people with the rights reserved to them. It can be readily supposed that questions might arise as to the number of beasts any one person had a right to turn out for agistment or pasturage, and it occurred to the officials—on no authority, I believe, of law, statutory or

otherwise—that no man could turn out more cattle than he could winter on his farm; and this doctrine received the Norman-French names *levant* and *couchant*, which in simple Dartmoor-English means rising up and lying down. The Norman-French tongue is not well understood on Dartmoor. The doctrine was borrowed from other commons in the country, but was not applicable to Dartmoor, because it was found by the statutes or charters afforesting and disafforesting the whole of Devonshire that the right to turn out beasts on Dartmoor was granted to all Devonshire men; therefore there could practically be no limit to the number of beasts *levant* and *couchant* in all the county. If that doctrine were valid now, no man could say how many beasts might be wintered on a farm by building cattle-houses and feeding on American maize or Russian oats.

Then there is the pony, that hardy and lively little beast, on whose habits I laid so much stress when treating of the rights of the *venvil* tenants. He does not go home for the winter, but abides on the Moor in all seasons, and defies all calculations as to the number that can be kept on any particular farm. The pony was the companion of the red-deer for ages, and is mentioned in ancient documents as “horses.” He was probably the first horse known to our Devonshire ancestors.

The rule, therefore, of *levant* and *couchant*, and limited commons, may be all very well on ordinary parish commons, but is utterly out of place on Dartmoor, and can be set aside as imaginary law put forward to curtail the rights of the Devonshire men and *venvil* tenants. If for the sake of argument, but for no other sake whatever, this idea of limited common be taken as a good idea, which it is not, instead of a bad idea, as it certainly is, could there even then be any fair or rational excuse for taking away all the best of the land, and leaving the worst, with the bogs, stones, and quagmires for the ponies and cattle of the commoners? Yet it is on this precious principle, called *levant* and *couchant*, that all the inclosures on Dartmoor have been made, and the best land taken from the ponies, the bullocks, and the sheep. Thousands of ponies have perished, valuable little beasts, worth £5 to £10 each, because the best and most sheltered land has been enclosed against them, and their bones lie bleached on the bleakest and barest parts of the Moor, to the heavy loss of the *venvil* tenants and the Devonshire men.

Returning to the rights of the Duchy, granted by the

king. These rights consist of the right to chase and kill the wild beasts of the forest; the hart, hind, buck, hare, wild boar, and wolf being specified as forest beasts of chase; and this right cannot be questioned, so we can wish the Duchy joy of it heartily and respectfully.

The Duchy has the right to receive the rents. The rents of a chase or forest are paid by the head, of horses and bullocks, or by the score of sheep, and not by the acre of land. Payment of rent by the acre is a new invention, compared with payment of rent by the head of cattle, and if no part of Dartmoor had ever been enclosed, the rents being paid by the head instead of by the acre, the amount received by the Duchy at the present time would be, I venture to say, quite as much as it is, and more profitable, the expense of inclosing not having been incurred. The whole of Dartmoor would have been well stocked by the surrounding tenants in venvil and the Devonshire men, and the rents paid on so large a number would amount to a considerable sum. There are no more industrious men, or men who do more credit to the country, taking the average of the people, than the small farmers with extensive rights of common. From them come the hardy, strong, and healthy race that supply the sinews and the muscles of the nation in all walks of life.

The Duchy has the right to drive the forest and the purlieus, in order to levy the rents; and here we come to the Drifts.

The deer were strictly preserved for the chase, to be killed and eaten by the Duchy, and no man could kill or injure them on the forest without a warrant (hence the term "warrantable deer," now used on Exmoor), or on the purlieus if they were forest deer. The forest laws are very remarkable, and were very severe in the time of Canute, before the days of the Normans, but they can only be alluded to here as affecting the rights on Dartmoor. In Canute's time a man had to pay for a deer with his skin, which some students of law supposed to mean that he was to be flayed alive; but a deeper insight into the matter showed that it only meant a flogging. Vert and venison—that is, the deer and their food—not being interfered with, the venvil men and the men of Devonshire had the right by ancient custom to turn out their beasts on Dartmoor, and take what they required from off it. The distinction between a venvil man and any other Devonshire man was, and still is, that the venvil man paid a rent or a fine, *finis villarum*, a fine of the vils, in

Dartmoor-English venvil, for the parish, vil, or manor in which he lived. Many parishes are in venvil, such as Whitchurch, Sampford Spiney, Peter Tavy, &c.; and some manors, such as Cudliptown, in Tavistock. The men of Devonshire, on the other hand, paid rent by the head of horses and bullocks, and by the score of sheep. There are four sorts of men mentioned in old documents as having rights—the borough men, the men of Lydford borough; the forest men, men on the forest, under-foresters, or keepers perhaps, and this may account for the hut circles; venvil men; and Devonshire men, sometimes called strangers. It appears that Cornish men had the right also, probably because the Duchy was the Duchy of Cornwall. The limit of levant and couchant might have been applied to the venvil men, to check their taking in cattle from others, and in that way depriving the Duchy of the higher rents paid by strangers.

The Drifts took place in order to levy the fines or rents, and were ordered on a sudden, no notice being given, that the beasts should not be taken off by their owners to avoid payment. The venvil tenants, holding their rights under the Duchy, were bound to join in the Drifts, being summoned early in the morning by the sounding of horns, &c. I described the Drifts in 1887, but I may repeat that Dartmoor was divided into four quarters—north, east, south, and west—and in each quarter there was a well-known place to which all the beasts were driven. There and then the Duchy official produced his authority, and levied the rents or fines by the head of cattle or ponies, which rents the Duchy had a perfect right to receive, and these rents included pasturage on the purlieus. The Duchy had also a right to receive night-rest, which was a fine for having cattle on the moor all night. In the days of the deer, men were not allowed on the Moor at night; but it came to pass that they could stay on the Moor all night by paying for that privilege. If a beast was not claimed at the Drift, and the rent not paid, he was driven to the Duchy pound at Dunnabridge, where he was kept for a certain time that the owner might claim him, and pay the rent, with a further fine for the pound; but if not claimed he was sold, and the proceeds went to the Duchy. It is clear that the value of the Duchy property on Dartmoor consisted in a great measure of the rents that could be got out of it. There were fines for horses, bullocks, sheep, pigs for pannage (a term meaning acorns), and more fines for taking coals, which we call turf, and for stone and sand. These fines were paid by the vils for the venvil men, and by the men them-

selves if they were strangers; and considering the extent of Dartmoor, they might amount to a large sum. There are many documents in existence to show that no beasts on the Moor were ever regarded as a case of trespass on the forest or the purlieus, and that all Devonshire men, or even Cornishmen also, had a right to turn out cattle on Dartmoor. It is evident that the principle of *levant and couchant* cannot apply to these rights of common; and in some documents the words "*without stint*," and "*sans number*" are used in regard to those rights of *venvil* men, Devonshire men, or countrymen, as they are sometimes called, or strangers.

This brings up the very knotty and very important question of the inclosures on Dartmoor, with the Duchy rights of inclosing.

Inclosures of the forest by the Duchy, or of the purlieus, must be quite inconsistent with the rights of *venvil* tenants and the Devonshire men for two good and sufficient reasons. First, because the inclosures deprive them of the right to turn out their cattle on the whole forest, which was especially reserved to them when the forest was granted to the Black Prince, any limited common to *levant and couchant* being impossible, as I have explained. Secondly, because inclosing the best land and leaving the worst for the commoners, cannot be otherwise than a great injury to their common rights. But even supposing, for the sake of argument, that the principle of limited common were applicable to the *venvil* tenants for the reasons I have given, has it ever been ascertained, or has there ever been any calculation made, as to the number of beasts that could be wintered on the vils in *venvil*, with a view of limiting the number? It never has been attempted, and the number remains an open question, leaving the ponies out of the account. I consider the ponies, however, the strongest element in the argument.

Notwithstanding these lawful and unanswerable objections to inclosure, the Duchy has inclosed thousands of acres of the best land on Dartmoor.

Whether inclosures, rightly or wrongly made, are good things in themselves is a matter well worth consideration. I need hardly say it is a question of political economy. In the early part of the century corn was so dear that hundreds and thousands of acres were inclosed to feed the people; but now that those hundreds of thousands of acres are inclosed the commons are by so much diminished, are worth more as commons than they would be if inclosed, and are of inestimable value to the small farmer and cottager, whose

interests have been usually ignored. By inclosing, according to the present law, land becomes the absolute property of one man, which was before practically the property of all the commoners. In the case of Dartmoor the Duchy has taken possession of a vast extent of the best land, which was before the property, for all practical grazing purposes, of the venvil men and the Devonshire men.

Some of the inclosures are very old; but most of them have been made in the present century—the large inclosures made by the convicts even within the last few years. The Duchy may say, and no doubt will say, that the inclosures are justified by custom, and that it always has been the custom of the Duchy to inclose. That is true; and twelve or twenty years of exclusive possession gives the land to the Duchy, according to law. But if a man picks my pocket in Tavistock for twelve or twenty years, the law does not give him the right to go on picking my pocket. He may be brought before the justices, and his nefarious practices stopped. I will say nothing that is disrespectful to the Duchy. I do not doubt that the Duchy has acted on a supposed right; but in thus acting the Duchy has deprived a great number of men of their ancient lawful rights, and has caused the death of thousands of ponies of considerable value to other people, by taking away from them the best and most sheltered pastures. Ponies are much dearer, much more valuable now than they were in 1806, when the French prisons, as the war prisons were called, were built at Princetown, and the first inclosures there were made. Now, when ponies are of so much more value, convicts have been inclosing the land over which the commoners have unquestionable rights; and the Duchy is paid rent by us poor taxpayers for taking away our property from us. But the evil does not stop there; for we are also heavy losers as taxpayers by the experiments in farming on our rights on a hopeless soil in a hostile climate. It is a fine moral idea to set convicts, imprisoned for theft, to take land from other people.

It is sometimes contended that inclosures afford employment, and therefore they are good things. But how can it be a good thing to oust, say, 100 men from land, in order to give employment to half a dozen? A great cry of depression in agriculture has been heard; in other words, prices are said to be too low, the people have their food too cheap. I do not contest that doctrine at this time and place; but if farmers are losing, as we are told, by cultivating land already

inclosed, it is quite impossible that they can want more land to inclose, and to lose more money thereby. As I have already said, and I say it on the best authority, the commons are of the utmost value and importance to small farmers and cottagers. I wish every schoolboy were taught that ever-truthful verse, which I again quote with solemn emphasis :

“The law condemns both man and woman,
Who takes the goose from off the common ;
But lets the greater felon loose,
Who takes the common from the geese.”

In political economy every farthing that is lost to an individual is lost to the nation, because the national wealth is made up of the wealth of the whole people taken together. It would be interesting to know how much money has been lost on Dartmoor, how much has been literally thrown away on it. Nobody that I ever heard of has ever made a shilling on Dartmoor. Can anyone report to this Association a single enterprise of the many attempted on Dartmoor that has ever paid a profit? I can name a few failures on a large scale.

The war prisons, including all the money laid out from the time they were built to the end of the war, with a tram-road from Plymouth to Princetown—this was part of the costs of war; a dead waste, with no return.

Many years after the war prisons were closed some speculators tried naphtha works there, and failed most completely to get naphtha out of the bogs at anything but a ruinous cost.

There was Mr. Fowler, of Liverpool, who farmed highly at Prince Hall, and left a fortune on the Moor.

There was Mr. Lynton, who enclosed Muddy Lake at great expense. He lost his money, and abandoned his inclosure to the Duchy.

There were the peat works at Rattlebrook, with a costly railway meandering over our commons, which, with other peat works at Walkham Head, ended in ruinous losses.

There were and are numerous mines on Dartmoor. Has any mine on Dartmoor ever paid a dividend to the shareholders? Many enterprising persons believe in tin on Dartmoor—a superstition from which I am myself exempt.

There are these convict inclosures. They must be of great cost to the taxpayer; and what he gets in return, in the shape of the moral improvement of the convicts, set to work to take away our rights of common, is a complicated thesis in ethics, but no relief of taxation.

There is the Princetown railway, about as fine a specimen of reckless enterprise as was ever heard of, which is saying a great deal. I hope I have some sympathy and pity in my composition, but I really cannot pity people who throw away their money in spoiling Dartmoor. They lose their money for certain, and it serves them right.

The Duchy is responsible for vast inclosures, made by other people on lease, thus taking away our pasturage at enormous losses to those who have made the inclosures. If the Duchy profit by them, it is at the expense of the lessees; and in course of time the leases run out, when the inclosed land is Duchy property, with the rights of common extinguished.

Continuing the subject of the Duchy Rights, the Duchy has a right to the minerals, whatever they may be. I have already expressed heretical doubts about tin, and I know miners have left many a "wrack" behind—monuments of their faith in their idol. The Duchy has a right to levy dues or fines on mining operations.

The Duchy has also a right to levy fines on digging coals, which we now call turf. But in the case of the venvil tenant the fine of the vil covers this as well as other fines.

In treating of the Duchy Rights I have been forced to allude to the commoners' wrongs, because the rights and wrongs have become in course of time so much confused that there seems to be a difficulty somewhere in distinguishing one from the other.

Many of the inclosures on Dartmoor must be considered past praying for. But seeing that the rights of the commoners are of great value, it will be well for them, with the venvil tenants at their head, to combine together and approach the Duchy with all proper respect, to ask the Duchy to agree to a scheme for the management of Dartmoor and the Devonshire commons, with due regard to the rights of the Duchy, and those ancient rights of the commoners which are now, and always have been, their own. I believe it will be much to the advantage of the Duchy on the one side, and to the commoners on the other, that the Duchy should firmly maintain the real and true rights—the rights of drift on the forest and on the Devonshire commons; that is, the right of levying rents by the head of horses and cattle over the whole; the right of preventing inclosures on the commons of Devonshire; the right of holding their courts, and hearing presentments of encroachments and damage; the right of appointing officers, moor-

men, &c., for the care of the forest and all its rights; and the right to all the red-deer, with which I should like to see Dartmoor again adorned. On the other hand, the commoners should be ready to give up to the Duchy certain of the inclosures, which might be agreed on between the two parties. Considering the feeling of injustice that prevails everywhere with regard to the proceedings of the Duchy, it would be no small advantage to the heir to the Crown—not His Royal Highness, the present heir, in particular, but to any heir—that his rights were not disputed, and the management of the Duchy property were no longer looked upon as a hostile proceeding to the neighbouring population of farmers and cottagers. The Duchy officers and moormen would have care of the beasts; and in the important case of the ponies, regulations might be made by the Duchy for the purpose of improving that very valuable breed of hardy and useful little animals. If the forest and the Devonshire commons were properly cared for, and the pasture preserved for the beasts, the commoners would readily consent to a rent by the head, which would be more to the advantage of the Duchy than all the inclosures.

Schemes have been established for the management for the public advantage of several royal forests—the New Forest, Epping Forest, Dean Forest, and others—to preserve these ancient, beautiful, and most interesting tracts of land for national pleasure-grounds, where the people of a closely-populated country may see trees, flowers, birds, and animals in their wild and native beauty. These forests are in nearly every respect similar in their character to Dartmoor, and such a scheme might be established for Dartmoor, by friendly agreement with the Duchy, which would be satisfactory to the public, who delight in Dartmoor; satisfactory to the commoners, whose ponies would increase and multiply exceedingly; satisfactory to the Duchy, whose conscience would be relieved of a heavy burden, and whose property would be secured on a solid and equitable basis; and satisfactory to the Devonshire Association, who would no more be worried by papers like this, and would have the stone circles, stone avenues, and the rest of it, for their members to indulge their speculative fancies.

Dartmoor being a chase held by a subject, and not a royal forest, there is that very notable distinction between it and the royal forests of the New Forest, Epping Forest, and others; but when it is considered who that subject is—a royal personage as he is, also that the Crown takes charge

of the Duchy when there is no Prince of Wales, as recently in the reigns of George IV. and William IV.—it is not too much to ask that it may be treated, as the royal forests have been treated, for the good of the public as well as for the good of the Duchy. Let us hope that the Duchy will follow the example set by the Crown, agree to a scheme for the management of Dartmoor, and in a friendly spirit meet the views of the venvil tenants, the Devonshire men and the public.

THE ANCIENT OFFICE OF PORTREEVE.

BY P. F. S. AMERY.

(Read at Tavistock, August, 1889.)

TAVISTOCK still has a portreeve as its chief borough officer, but in name only, for by the *Municipal Corporation Act of 1883* no new election has been able to be made since 1886, when Mr. Russell Harris was appointed, and sworn to continue in office until a successor was appointed. As his successor never will be appointed, the present portreeve must be considered the last of his race, and by non-residence in the borough he has also lost his qualification for his judicial function as a justice.

A few remarks on this the most ancient of our public officials whose title, election, and duties are unknown to the general public, and very little understood even by antiquarians, may be interesting on the present occasion. The existence of this ancient office among us is a link between the free institutions of local self-government of our Saxon forefathers and the present strivings of enfranchised citizens to conduct their own local affairs, as exhibited in the recent adoption of County Boards, which link has been preserved through centuries, and kept its hold, although much altered and shorn, through eras of local despotism on the one side, and the attraction of centralization on the other.

The title and office of portreeve must be regarded therefore not as a lifeless fossil from which the learned may draw deductions of the unknown past, but rather as an old tree still retaining life, but which has been polled and pruned so as hardly to be recognised, but yet retaining the life, sap, and characteristics of its species, from which new shoots may be reared and bent to the new wants and duties of the present. The word portreeve is composed of a Roman prefix—*porta*, a

city gate where markets were held, and hence signifying a market, and the Saxon suffix *geréfa*, a reeve or steward. Dr. Pring, in an article on the "Name and Office of Portreeve,"¹ appears to hold that the existence of a portreeve points to a Roman origin of a borough, and that a wall or dyke of earth must have existed to require a gate, or the word *porta* would have been meaningless. This is not borne out by facts, for neither Tavistock, Ashburton, Hatherleigh, or Modbury, in which towns the office exists, have ever been so enclosed. It appears that, whatever was the origin of the word, *porta* came to mean a market; and Kemble says,² "The Portgeréfa is in many respects similar to the Burghgeréfa; but it appears that 'Port' is applied rather to a commercial than a fortified town." The true portreeve is therefore the reeve or steward of a market town. But whose steward was he? Not the king's, or any great lord's necessarily, because he was elected by the freemen of the place. The answer to this question will, I think, throw some light on the local self-government of the people by the people and for the people as existed in very early Saxon times.

Toulmin Smith, quoting from Waitz, says,³ "Among the ancient Saxons while yet in Germany the family was a community of all comprehending importance, and its care provided completely for nearly all the wants of the individual. The family meets us here as the closest possible union, consisting of real brethren thoroughly animated with the spirit of brotherhood and of mutual assistance and support, and provided completely for nearly all those wants, the satisfying of which fell in later days partly to the State and partly to artificial societies formed for the purpose." The emigration of the Saxons to Britain broke up the real family circles, and necessitated the formation of some institution to take its place. Probably whilst fighting and ranging over the land the military formation served this purpose, but when the adventurers settled down on their conquests, and turned their attention to pursuits of peace, the artificial alliance of frith-borh or frank-pledge was substituted, by which freemen of the same place or *lathe* (*leet*) became mutual security for each other's good conduct, and the gatherings of the members of the pledge for business took the place of the family council, even to the retaining of the family feast in the social banquet which follows every court-leet.

¹ *Antiquarian Magazine*, iv. 264.

² *Saxons in England*, ii. 173.

³ *English Guilds*, English Text Society, 1870.

But in the real family group there was an acknowledged head, either the senior or the representative descendant of the founder, or perhaps the most influential person; through him alone outsiders could approach the little community on any important common subject, who alone could enter into negotiations on behalf of the family, and whose decision would settle interfamily disputes, or those arising in the process of trading or bartering with neighbours or strangers. To provide a head for the artificial family, the members of the frankpledge or freemen of the borough, selected at the annual gathering or feast one of their number for their reeve or steward, with the title of portgeréfa or portreeve, whose principal duty was to control the market, and witness all contracts and transactions of barter and sale between strangers, and be the mouthpiece and representative man of the community, with the power of calling a meeting of freemen to consider any common subject. Thus the portreeve obtained his authority from his election by his fellows and equals, not from the State, the king, or lord of the borough, and was really the reeve or steward of his town's rights and liberties for his term of office on behalf of his fellow-citizens.

Kemble, speaking of the offices of the portgeréfa and burghgeréfa, says,⁴ "The difference of these officers will have in some degree depended upon the comparative power, freedom, and organization of the citizens themselves, and I can readily believe that the portreeves of London were much more important personages than the burghreeves of Oxford or Bath. In smaller towns it is possible that the court of the portreeve was a sort of *pié poudre* court; but in the larger it must have had cognizance of offences against the Customs laws, the laws affecting the mint, and the general police of the district. As a general rule I imagine the portgeréfa to have been an elective officer, perhaps in the large and important towns he required at least the assent of the king. In London he holds the place of the sheriff, and the king's writs are directed to the earl, the sheriff, and the portreeve. In the smaller towns especially it must have been a principal part of the portreeve's duty to witness all transactions by bargain and sale. A portion of his substance at least was probably derived from the proceeds of the tolls and fines levied within the district."

As time passed on the office lost nothing of its importance, says Gomme,⁵ as is shown by the fact that not long

⁴ *Saxons in England*, pp. 173, 175.

⁵ *Local Institutions*, p. 4.

before the Norman conquest the portreeve and Bishop of London were recognised as the two chief officers of the city. It was to those two that the charter of William the Conqueror was addressed, confirming to them all the laws which London had possessed in king Edward's day. He goes on to show that to the Norman kings the idea that the source of all power rested with the people was quite contrary to their traditions and practice. When William the Norman came to these shores he found strong local centres of power, already tending to decay, it is true, but still strong. He did not sweep away these local centres, but he gave them charters, and taught them to believe the grand fiction, that the sovereign was the source of all their legal authority. The peace of the land became the "king's peace." The law became the "king's law." Justice became "king's justice." The courts became "king's courts," and the judges who sat there became the servants of the crown, in theory if not in fact. Under the Norman kings we find the principal burghs were required to surrender their freedom, and in return received from the king charters with power to elect their chief officers, to whom extended authority was given; who, however, were now to represent the sovereign, in fact, to elect mayors who hold office from the sovereign, instead of portreeves who formerly represented the people; this was the case in London, Exeter, and most of the important towns. But in towns of less importance, or where the church or some noble was lord of the borough and manor, they were called upon to surrender their lands, and had them re-granted, or in default forfeited them. In the re-grant the right that belonged to the people's courts were transferred to the noble or prelate. According to English law terms it was the granting of *sac* and *soc*. *SACA* was the power of hearing and determining causes and disputes, levying forfeitures and fines within a certain precinct. *SOCA* was the territory or precinct in which the *saca* and other privileges were exercised. The ancient assembly of view of frankpledge or court-leet, where the portreeves were elected by the full voice of the freemen, new members received into the pledge, transfers of property witnessed, and criminal cases investigated by the full court, was now presided over by a steward appointed by the lord, and the business transacted, and elections made by a grand jury of twenty-four freemen chosen by the lord or his steward. Thus the lords of boroughs really held the power of electing the portreeves, although ostensibly made by the freemen.

From time to time in succeeding centuries the popular part of the election was further curtailed, and with it the authority of the portreeve, until we now find the office continued in only a few borough and market towns; and, curiously enough, in those that were formerly under some prelate or religious house we find the best examples of the election and duties of the office fulfilled, as at Tavistock and Ashburton. The former was held by its abbot, and the latter by the bishops of Exeter as lords. In these towns a grand jury of freeholders at the court-leet annually elects a resident freeholder to fill the office. He acts as returning officer at elections, and convenes all public meetings of inhabitants when any subject of common interest has to be considered. In public processions the portreeve heads his fellows as their leader and representative; whereas a mayor, who represents the Sovereign, takes his place in the middle or rear, where the Sovereign would be if present. The Portreeve of Tavistock, by ancient custom, sat as a justice in the borough, which, as far as I can ascertain, is a unique case, for representing the central power is contrary to the essential idea of local self-government.

Perhaps the chief causes that have led to the decline of this ancient and honourable office are, that the lords of the boroughs, by their right to name the jury, have too much influence on the election for a portreeve so elected to really represent the freeholders, much less the ratepayers; also that the power to levy rates for borough requirements does not rest with the freemen, but is very properly vested in the ratepayers, who now represent the people, and have the real power, through their vestries, guardians, and various other boards, to raise and spend money.

One would have expected that among the numerous offices and titles created by the recent restoration of representative local self-government to the people that of portreeve, which I have shown to have been coeval with the English nation, would not have been overlooked, but have been adopted, like that of alderman, and given to representatives of market or borough towns, who, by their election and duties, would in spirit correspond with those of the *Portgeréfa* of our Saxon forefathers.

MUNICIPAL LIFE IN TAVISTOCK.

BY R. N. WORTH, F.G.S.

(Read at Tavistock, August, 1889.)

TAVISTOCK is fortunate in the possession of one of the finest collections of parish records in existence. There are deeds dating back to 1287; churchwardens' accounts commencing in 1385—forty years earlier than any other warden-roll known to be in existence; miscellaneous documents beginning in 1370. Through the liberality of the Duke of Bedford these have all been examined, and a full calendar printed;¹ and my present object is simply to indicate some of the directions in which they throw special light on the local and personal history of the locality.

The first distinct mention of an organised system of local government is in a deed which dates itself either in 1320 or 1348, by the mention of Robert David as member for the borough, and which quit-claims a house and curtilage to Robert ffolka, "as it was determined by our common counsel and assent." Robert Blakesmyth is named as being then portreeve, the earliest on record, unless it be Henry de Kestawyk, who appears as "senior" of Tavystock in a deed that may be *temp.* Edward I.

In 1325 we have a grant made by Walter Cullyng, Roger Stacey, William Seleman, Robert the Salter, and John Populston, as brethren and wardens of the light of St. Mary in the parish church of Tavystoke, to Reginald of Eggecombe, clerk, and this is the first definite mention of the existence of a guild.

A guild seems to be implied, however, in the reference to the "great bridge" as then existing in an undated deed,

¹ *Calendar of the Tavistock Parish Records*, by R. N. Worth, F.G.S.

probably *temp.* Edward I. An imperfect document of the reign of Henry VIII. sets forth property belonging to the "Jesus yelde," some of it connected with the Cause, which appears to have formed one of the approaches to the bridge. The name Guile Bridge, familiar in the story of Childe, the Hunter, is really Guild Bridge; and we know that it was built some time before 1370, because in that year there was an appeal made by Stephen, Abbot of Tavistock, and the convent of the same place, with certain *burgesses* of the borough, for "alms towards the sustentation and repair of the great stone bridge adjoining the town of Tavistock over the great water called the Tavy, which runs down violently from the moor, where there is no good ford." The bridge is there said to have been erected "*per antecessores nostros.*"

It is worthy of notice that the *burgesses* named are twelve in number, and that they are evidently intended to represent the borough, which looks very much as if we had here a kind of corporation, possibly connected with the manor jury, by whom from time immemorial the portreeve was chosen. The names given are: John of Meauwy, Richard Lamborne, John atte forde, Richard Tope, Robert Reeke, Roger Milleton, John Wendout (Windeat), Thomas Ock, William Strout, Robert Ayschforde, Luke Selyman, and Robert Joca. Two of these we elsewhere find filling the office of portreeve—John atte forde, in 1364, and Robert Ayshforde, in 1390. John Forde represents the borough in 1382 and 1388, and John Wyn-doute in 1378 and 1386; and these facts also point in the corporate direction.

The list of portreeves to be gathered from the documents is very imperfect.

Edward I.	Henry de Kestawyke
1320-48 (?)	Robert Blakesmyth
Edward III.	Robert Kroker
1330	Richard Kroker
1338	Ralph atte Wylle
1340	David of Milemete
1342	John Wytham
1360-61	Walter of Lantharford
1364	John atte forde
1366	William Stapledon
1375	William Mey
1378	Richard Estecote
1382	William Thorne
1386	Walter atte Barne
1390	Robert Aysforde

1398	Walter Bradeleygh
1402	John Walraddon
1403	John Lybbe
1406-7	Richard Piper
1417	Richard fr[en]ch
1434	William Aysheforde
1464	William Drake
1497	Richard Lybbe

These all occur as witnesses to deeds, and the last is given Mayor [Maior]. It will of course be borne in mind that portreeve is a distinctive title of a Saxon "headman" of a township, and that its use therefore implies the existence of a system of local government in Tavistock before the Conquest.

The parochial year in Tavistock ran from the Feast of the Invention of the Holy Cross; and the names of the first wardens given are Thomas Ley, appointed 1384, and William Strod, mentioned as in arrear in 1386, who was probably Ley's predecessor. There was only one warden, and he was at first called "warden of the light of the Church of the blessed Eustachius of Tavistock."

But there were other wardens. Three accounts have been preserved, written on small pieces of parchment, and not on rolls, for 1405-6, 1407-8, and 1411-12, and these set forth the receipts and expenditure of the "warden of the *store* of the blessed Eustachius." This store consisted of live stock—oxen, cows, sheep, and goats; and the net receipts were paid to one John Nyk, or Nyks, gubernator of the church.

And beyond these again there is casual mention of various guilds, whose accounts were evidently their own private affairs. The phrase "warden of the light" for the general church accounts disappears in the 15th century. In 1470 John Brune is "custodis legitti;" in 1538 Roger Collen is "warden of the high store of the parish church of Tavistock;" in 1522 Walter Gloubbe is "warden of the pyshe;" in 1555 Richard Bater is "warden of the parishe church." Two wardens first appear in 1561, and they for some time vary between warden of the "church" and "store," the most notable entry being that of Margaret and John Wythecombe, as joint wardens in 1594. But there were practically two wardens as far back as 1539, when John Lybbe accounts as bailiff of the parish lands.

The first account preserved, that of 1385-6, sets forth six properties as belonging to the parish: the park of Crewelake,

gardens of Christina Crokker, of Richard Spora, and Saint Marie, garden formerly Robert Wodemanyswell, and tenement formerly Robert Brente, the total rents being 9s. 9d. By various gifts the possessions of the church gradually and steadily increased, until a rent roll *circa* 1535 sets forth thirty-eight properties, yielding an annual rent of £16 2s. 1d., besides six chief rents amounting to £1 1s. 4½d. This was independent of the rent of the Jesus Guild—£2 19s. 8d.

But it would seem that while these lands and tenements are said to belong to the parish church, and were certainly managed by the wardens, some of them must have had a special appropriation. The expenditure in the early accounts is strictly upon church matters; but when we reach 1470 we find the almshouse introduced. Unfortunately there is a gap of forty-three years between this account and the preceding one preserved, so that we cannot say more than that the almshouse comes into the accounts somewhere between 1427 and 1470. Subsequently it became the custom to make a separate account for the almshouse, and to associate for that purpose special wardens with the churchwardens. The earliest of these accounts preserved is dated 1586.

It was the practice to make special collections for special purposes as early as 1423, when money is said to have been collected for the "new bell."

A new element is introduced in the account for 1555, in the provision of a bedstead for the schoolmaster, and we have also money laid out in paving on the East Bridge. In 1561-2 there are several items of expenditure on the schoolhouse itself; and from this date the rolls begin to assume that general character with which we are so familiar in churchwardens' accounts down to practically the present time. A church rate appears in 1566-7: "Itm receyved of the pissheners towards the mayntenaunce and repaying of the churche," £8 6s. 6d. But the wardens had then somehow acquired a more important source of income in the market houses and fairs, which yielded £14.

In this year we have the first extant entries of payments for killing foxes, for the relief or sending away of poor people, for sugar and wine to justices when they kept sessions, for soldiers, for a lawsuit about the commons, and the like. Soon after we get gifts to people who begged by licence—for lazar houses, for prisoners; and in 1574 we learn that the vicar had £10 a year for teaching the scholars, and William Shere £4 for teaching the little children.

In 1588 we have, in addition to the church rate, a rate

made for the "settinge fourthe of Souldyers for the guardinge of the queene's mat^{tes} person," money paid to various preachers, John Drake the grammar school master, and the first of many entries of relief to Irishmen who begged by licence, with sometimes an Irish gentleman or gentlewoman.

Side by side with the manor court, and with the more distinctly-defined ecclesiastical organization of the parish and the guilds, there grew up a quasi-municipal authority (of which the list of burgesses given in the already-cited document of 1370 may be a vestige), neither created nor confirmed by charter, but eventually exercising considerable powers.

It is possible that the custom of appointing feoffees of the lands belonging to the church, the almshouse, for general parish purposes, and in later days of the lands of the Maudlin house of St. Mary Magdalen and St. Theobald, may have helped the growth of what at first was only incidental. There is documentary evidence of the appointment of feoffees in the fourteenth year of Henry VI.; there is a complete list of the feoffees then existing in a deed of 1460; and in 1483 we find a distinction observed between Tavistock borough and Tavistock parish.

Now in 1552 we have acting as feoffees, and granting leases in conjunction with the churchwardens, under the title of the "eight men"—John Badge, Henry Willy, John Glubbe, William Grills, John Glandfyld att Wyll, John Cornysche, Walter Master, and William Poynter, otherwise Kedly. In the previous year eight men, but not so-called, take a grant on behalf of the parish, including Badge, Kedly, Glandfyld, Glubb, Grylles, Wylles, and Mayster, John Touker taking the place of Cornysche. In 1540 other eight act on behalf of the parish, six of whom are described in 1533 as feoffees.

This seems to make pretty clear the development of feoffees into the "eight men." The second mention as "the eight men" is in 1560, when William Nycoll takes the place of Walter Master. They are not, however, now feoffees; for a body of feoffees (twenty-five in number) are found acting in 1563, and other feoffees at later dates; and in 1585 we have the constitution of the "eight men" duly set forth as chosen—

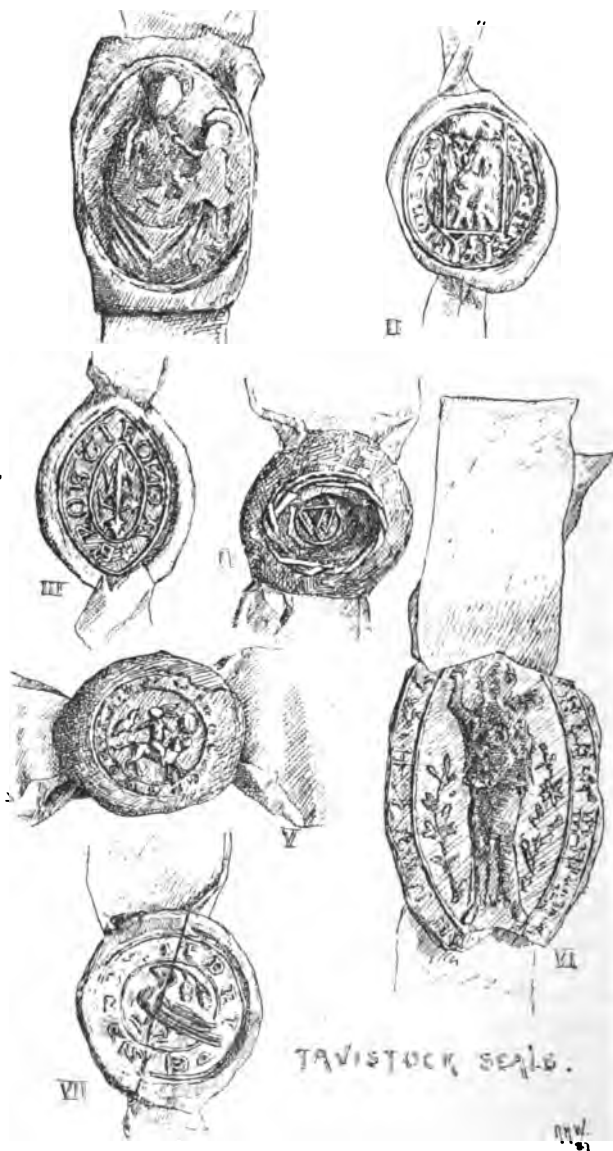
"By gen'all assent & consent of the pishe of Tavistock to be Supvisors and dispensatours to & for the behouf and vse of the saide Church & pishe of Tavistock & of the

poore people of the same, and also of the lazar and poore people of the hospitall there, namelie for appointinge, doinge, vsinge, dispensinge, and ordringe the yerelie Revenewes, pfitts, lands, tenem^{ts}, goods, chattells, and other affaires that any waie touche belong or concerne the said Churche & pishe."

Now this is a tolerably large commission, and it did not lose in effect as time went on. By 1660—how much earlier we cannot say—the "eight men" had become "the Masters of the Towne & Parish of Tavistocke," and had agreed to meet together in the church "euery first Monday in the moneth to consult of & consider about the busines of the parish." The custom seems to have been to continue the masters and simply fill vacancies, so that they were in effect chosen for life, precisely as if they had been the aldermen of an old-fashioned chartered corporation. The other public officers—churchwardens, overseers of the poor, collectors of the poor, and sometimes supervisors of highways—were chosen annually.

It appears eventually to have been the practice for the "Masters and Governors of the Town and parish of Tavistock," as they are described in 1678, to take part in—and apparently in some sort to authenticate by so doing—all sorts of public affairs. They authorize payments by the churchwardens, join with the inhabitants in offering rewards for the destruction of foxes, with the overseers in agreeing on payments for the poor, with the feoffees of the Maudlin lands in leasing portions of that property, and themselves act as feoffees of the parish lands. In 1697 they are described as "feoffees and Masters Customary of the parish lands of Tavistocke;" in 1705 as "Masters and Governors of the town and parish of Tavistock, and Trustees of the lands commonly called the Maudlin lands." And thus they would seem to end practically where they begun. The masters of 1705 cannot be traced as a distinct body later than 1711, after which we get the acts of ordinary feoffees only, some of whom, as respected a grant by Dame Mary Knivett, were created by a deed of that year. And since we find sundry other properties dealt with by the same feoffees, there is very little doubt that eventually all the endowments of the parish became vested in the one body.

We have only one example in the papers of joint action on the part of the portreeve and the "eight men"—a petition to the Earl of Bedford, *circa* 1677—"of your Portrieve and the Masters of yo^r Towne and Burrough of Tavistock," touching St. John's Chapel, once used as a pest-house.



The portreeve was the most important link between the past and present. Representing the head-man of the Saxon community, with a recorded historical existence and continuance of at least six centuries, long preceding the "eight men" and long outliving them, his public life came to an end in 1885, when the disfranchisement of Tavistock borough closed a line of membership which began in 1295, and relieved him of the duty of returning officer.

These facts, touching the development of local government in Tavistock on the lines of the Saxon township and feudal manor, are scattered through the records in such an irregular fashion that it seemed well worth while to bring them together, the more so as I am unacquainted with the existence of a similar body of evidence in any other non-chartered town. But it is only one line of enquiry out of many—personal, ecclesiastical, social, historical—for which these singularly interesting, albeit chronologically imperfect, records afford material.

I append engravings of a few characteristic seals :

I. Virgin and child attached to a lease of the Maudlin Hospital, 1542. II. Seal to grant of William ffresshepond, 1464. III. Seal of Robert folka, 1330. IV. Rush-ring seal to grant by feoffees, 1460. V. Seal affixed by John Wale, chaplain, to grant to Thomas Mewy and Richard Melaton, 1389 (?). VI. Seal of Maudlin Hospital, 1542. VII. Seal to lease from Luke Wyndsore to Roger Bykawylle, 1389.

THE BIRTHPLACE OF SIR WALTER RALEGH.

BY T. N. BRUSHFIELD, M.D.

(Read at Tavistock, August, 1889.)

THE place of birth of a great man has ever excited the interest of the general public, far transcending, as a rule, that of his death.

Of the many persons who visit, or who make enquiries concerning, the house where Sir Walter Raleigh is reputed to have been born, a very small proportion seek to know aught of the spot where he met his untimely end, in Old Palace Yard, Westminster—notwithstanding the fact that no event in the reign of James I. had a greater effect on the history of that period, than the circumstances which led to and culminated in the execution of Raleigh—the judicial murder, as many still consider it to have been.

Although various localities have been mentioned, the farmhouse of Hayes is now generally accepted by his biographers and others to be that of his birthplace. The evidence in favour of this view has hitherto been somewhat weak, being mainly based upon the copy of a letter attributed to Raleigh. That this opinion is the correct one has been unexpectedly demonstrated by the recent discovery of Raleigh's original letter, which has for many years past been preserved in private hands.

The object of this paper is to give a full account of all that is known of or relates to Hayes, as the place where Raleigh was born, and where he spent the early years of his life; to include a description of the original document alluded to, as well as of the building itself, with its surroundings, yet happily preserved to us.

Three places, situated in different parts of this county, have been claimed for the honour of being the scene of his birth. Two of these will not require much notice.



HAYES BARTON.

1. *Exeter*. R. Izacke,¹ the Exeter Chamberlain and Antiquary, recorded, "Some say . . . that he [Raleigh] was a Native hereof, and born in the house adjoining to the Palace-gate." No reference or testimony of any kind is given; no other work, as far as I am aware, alludes to this rumour, for it is little else. Izacke's statement may therefore be summarily dismissed.

2. *Fardell* (Fardel, Fardle). A few miles from Ivybridge, and in the vicinity of the Cornwood Station of the Great Western Railway, there yet remains the ancient dwelling-house of Fardell, with its chapel and picturesque surroundings. This was the ancestral home of the Raleigh family, into whose possession it passed on the marriage of John Raleigh with Joanna, the daughter and heiress of William Newton "de Furdell," in the time of Edward I. Sir Walter's father was born there, and either before or soon after his first marriage with Joan Drake, of Exmouth, he left the old home, and settled at Hayes.²

Upon Fardell, "tradition has conferred . . . the honour of being his [Raleigh's] birthplace." So stated the Rev. T. Moore in 1829, and added that this honour "the inhabitants of the vicinity" were "unwilling to resign."³ Again, Edwards, in 1868, affirmed, "They will be very angry if you tell them that, although Sir Walter Raleigh's forefathers lived in the house, and worshipped in the chapel, for very many generations, the great man himself was born not at Fardell, but at Hayes."⁴

That this tradition is an old one is exceedingly probable, although I have been unable to trace any evidence of it anterior to the present century. That Fardell was one of Sir Walter's principal residences is an idea that has long been entertained. For instance, in a newspaper advertisement of 1762 (repeated at greater length in July of the year following), Fardell is described as "formerly the seat of Sir Walter Raleigh." From its great local interest I quote the entire advertisement:

"To be Sold, All that capital Messuage, Barton and Farm of FARDLE, near Ivy Bridge, in the Parish of Cornwood, and County of DEVON, formerly the Seat of Sir Walter Raleigh, and late of Mr. Thomas Pearse, deceased; consisting of a very commodious

¹ *Memorials of Exeter* (1781), 147.

² "Notes on the Raleigh Family" in *Trans. Devon. Assoc.* xv. 165, 166.

³ *History of Devonshire* ii. 229, 230.

⁴ E. EDWARDS, *Life of Raleigh* (1868), i. 9. I may here incidentally mention that I was shown over the house in 1887 by its courteous possessor, J. D. Poda, Esq., and was then unable to corroborate the assertion made by Edwards twenty years before.

and large Mansion-House, with every necessary Courtlage and Outhouse for a Gentleman or Tenant; and upwards of three hundred Acres of Arable Land, Wood, and Orchards. These Premises having been kept in hand by the late Proprietor, and very greatly and continually improved both in Houses and Lands for upwards of twenty Years last past, are now in compleat Repair, and situate in a delightful Sporting Country.

"There is also held in Demesne with the Barton, an Estate called Jennings's, being about forty Acres of exceeding rich Land and almost contiguous thereto.

"Also another Estate called Goadlage, being an excellent large Summer's Run for Cattle.

"As also an extensive Right of Common on Hanger Down in Cornwood aforesaid; and sundry other advantageous Appendages beyond the general Run of Estates in that Country.

"Any Person wanting further Informations to particulars, may apply to Samuel Yonge, Attorney at Fardel aforesaid.

"December 24th, 1762."

This view was advocated by a late Devon antiquary, Mr. C. Spence, in a paper entitled, "Some Account of the Ancient Mansion, Fardell." This he described as "a venerable structure which cannot be looked upon without feelings of deep interest, inspiring yet deeper when known to have been one of the principal residences of the illustrious Sir Walter Raleigh."⁵ Unfortunately we have no evidence whatever that Sir Walter ever occupied Fardell, much less that it was one of his "principal residences." Such facts as we possess militate directly against the correctness of this assertion. We know that the place came into the possession of his father's eldest son, George (by his first wife), and it is probable that he had been long resident there, prior to the death of the former. It ultimately descended to Sir Walter's own brother, Carew, who sold it "unto Walter Hele, of Cornwood."⁶

Moreover, there is not a particle of evidence to support the opinion that Sir Walter was born there, and which Edwards⁷ summarises as "a local tradition, long listened to, although without real foundation."

3. *Hayes*. The only place having its claims supported by direct evidence of being that where Sir Walter was born is the farmhouse of Hayes, situated in the parish of East Budleigh, and to the consideration of this the present paper will be devoted.

⁵ *Trans. Exeter Dioc. Architect. Society*, iv. (1853) 156. It is a matter of regret that the illustrations which accompanied the paper were not engraved. No good view of Fardell has yet been published. There is a fair woodcut of it, "from a drawing by Mr. Condy, of Plymouth," in Moore's *Devonshire*, ii. 230.

⁶ SIR W. POLE, *Devonshire*, 322.

⁷ *Exmouth and its Neighbourhood* (1868), 127.

The known events in the life of Sir Walter's father, from the time he first occupied Hayes, early in the sixteenth century, to the period of his death there, the interest he appears to have taken in parochial and other matters, the interment of his first wife in the parish church, &c., have all been related in a former volume of the journal of this Association,⁸ and therefore need no recapitulation here. We are certain in one point, that it was during the period of his tenancy of Hayes that the future Sir Walter was born.

The earliest biographical account of Sir Walter was a short memoir of twelve pages (250-261) by William Winstanley in his work on *England's Worthies*, published in 1660, but this contained no account of his early life. The first attempt at a complete biography of him was written by John Shirley, and appeared in 1677, with the title *The Life of the Valiant and Learned Sir Walter Raleigh*. It was first printed in folio size to accompany the edition (believed to be the ninth) of Raleigh's *History of the World*, issued during that year. This was reprinted in octavo form in the same year, from which I extract the following :

"I find him born at a place call'd *Budely*, or *Budleigh*, in the County of *Devon*, in an House which his Family had long possest, call'd *Hays*." (p. 8.)

From what source this information was derived is not stated. In 1691, Wood published his *Athenæ Oxonienses*, and in his account of Sir Walter (i. 369) he corroborates the statement of Shirley, and for his authority quotes a letter written by the former to "one Duke," the owner of Hayes, expressing his desire to purchase it, from being "born in that house." We have evidence of this information having been obtained from John Aubrey, the well-known antiquary. Under date June 15th, 1680, eleven years therefore prior to the publication of the *Athenæ Oxonienses*, Aubrey sent to his "worthy friend, Mr. Anthonie à Wood, Antiquarie of Oxford," a series of *Lives of Eminent Men*. At that time Wood was making collections for his great work, and Aubrey had been asked to render him some assistance, as the following extracts from his letter to Wood, sent with the MS., will prove :

"I have, according to your desire, putt in writing these Minutes of Lives tumultuarly, as they occur'd to my thoughts : or as occasionally I had information of them. . . . 'Tis a taske that I never thought to have undertaken till you imposed it upon me, sayeing that I was fitt for it, &c."

⁸ Vol. xv. pp. 163-179.

Aubrey's *Lives*, "Selected, and now first published, from the Original Manuscripts in the Ashmolean Museum," were, with a series of *Letters written by Eminent Persons*, printed and issued to the public, in 1813, in three 8vo volumes. A memoir of Sir W. Raleigh occupied 509-521 of the second volume, and terminated with "A copy of S^r W. Raleigh's letter, sent to Mr. Duke, in Devon, writt with his owne hand." The portion quoted by Wood is a transcript of this, the person being altered from the first to the third, and up to the present time has continued to be regarded as the trustworthy authority on the subject.

A copy of the letter, differing in several particulars from that of Aubrey, is printed in Edwards's *Life of Raleigh* (ii. 26). It professes to be from the same source, as the following reference is given: "As transcribed from the original by John Aubrey. M.S. Aubrey iv. f. 47 (Bodleian Library, Oxford)." Mr. E. B. Nicholson, the Bodleian Librarian, had Aubrey's M.S. examined for me, but without finding any trace of the transcript cited by Edwards; he, however, kindly sent me a copy of another from Ballard MS. xi. fol. 2 (Bodl. Lib.)⁹

These three versions I have arranged side by side for the purposes of comparison. (See opposite page.)

Allowing for errors due to careless copying, it is fairly evident that one document was the parent of all three. The most important variation is in the second line of the transcript from Edwards's work, where the word "Hayes" is omitted.

The Ballard copy is contained in a letter written by a grandson of the Mr. Duke, to whom Raleigh addressed his application. It is unsigned, and omits mention of the year. It commences thus:

"Madam

"Otterton July y^e 2d

"I here send you in answer to your desires a copy of a letter which Sir Walter Raleigh sent to my Grandfather, which here follows."

Up to this point there has been no mention of Raleigh's original letter; and hitherto, when enquiries were made respecting it, the results were very meagre. In 1868 Edwards (*Op. cit.* ii. 26) asserted it "was, for a time, kept at Hayes, and was shown to visitors. Its present abode is not known." But in the previous volume (i. 9, 10) he had affirmed, that "for a long time [it] was preserved at Otterton House, the seat of the Duke family, and was shown freely to visitors."

⁹ I take this opportunity of acknowledging, with many thanks, the assistance courteously, fully, and promptly rendered by the officials of the Bodleian Library on this as well as on many previous occasions.

3. BALLARD.

(*Ballard MS.* xi. fol. 2 ; Bodl. Lib.)

Mr. Duke

I wrote to Mr. Prideaux to move you
for y^e purchase of Hayes a farm
sometime in my father's possession. I will
most willingly give you whatsoever in your conscience
you shall deem it worth, and if you shall at any time
have occasion to use me you shall find
me a thankfull friend to you and yours.
I am resolved if I cannot intreat you, to build
at Colliton, but for y^e naturall disposition I
have to that place being borne in that house I
had rather seat my self there, then any where
else. I take my leave, resting ready to countervail
all your courtesies to y^e utter of my power,

Court y^e xxvi of July 1584

Your very willing friend

in all I shall be able

WALTER RALEGH.

As these places are upwards of two miles distant from each other, one or other of the statements must be erroneous. There is no local tradition that it was ever exhibited at Hayes. That Otterton was the spot is borne out by Polwhele¹ as follows: "This letter . . . was, a short time since, to be seen at Otterton-house, pasted on a little board for the better preservation of it." As his work was published in 1793, this extract indicates the preservation of the letter up to within "a short time" of that date, and this comprised all our knowledge of it.

Although it had been lost sight of for many years, when compiling a "Bibliography of Sir W. Raleigh" I hazarded the opinion that the letter, "if not destroyed," would "probably be found among the papers of the Duke family."² At that time I little thought the Tercentenary Commemoration of the Spanish Invasion of 1588, would be the instrument for throwing light upon the subject. Connected with this Commemoration, an "Exhibition of Armada and Elizabethan Relics" was opened to the public at Plymouth on July 20th, 1888. Amongst the exhibits sent in after the completion of the catalogue, but included in an appendix to it, I noticed the following:

"431. Autograph Letter of Sir Walter Raleigh, having reference to the sale of Hayes-Barton, his birthplace . . .
Lent by William Square, Esq." (p. 55.)

On applying to him, Mr. Square kindly gave some information respecting the document, and referred me to its owner, Miss Glubb, of Great Torrington. On being returned to that lady at the close of the exhibition, she and her brother kindly afforded me every facility for making a careful examination of it, and of collating it with the printed versions, and, further, gave me full particulars of its history. A suggestion that, to provide against accident, some photographic fac-similes of it should be taken, was very courteously complied with.³

It was found by Miss Glubb some years ago "amongst some old papers and letters which were about to be cast away." Previously to that period its existence was unknown, so far as to being in her possession. When or under what circumstances it passed into the hands of her family there is no

¹ *History of Devonshire*, ii. 219.

² *Western Antiquary*, v. (1886), 220.

³ It was subsequently exhibited, in Miss Glubb's name, in the collection of Armada and other Relics held in the Grand Saloon of Drury Lane Theatre in October and two following months, and described at page 49 of the catalogue.

direct evidence to show, but the following particulars appear to throw a good deal of light upon it.

Her family were former residents of Bickton, and were on intimate terms with that of the Dukes, who resided in the adjoining parish of Otterton, at the manor house there,⁴ and who, amongst other manors, owned that of East Budleigh, in which Hayes is situated. Her grandfather, the Rev. John Glubb, became the Rector of Bickton on February 22nd, 1750, and died on March 4th, 1797, at the age of 68.⁵ After that event his widow returned to Exeter, where she remained until one son (the father of Miss Glubb) had finished his education, and passed his examination as solicitor. She then removed to Great Torrington, where her son received several appointments, amongst others those of clerk of the union, town clerk, and magistrates' clerk, and died in 1850, aged 67. His elder brother, the Rev. Peter Glubb, became rector of Little Torrington, and after a residence there of about half a century, respected as a clergyman and a magistrate, died in 1852, at the age of 83. In the following year, his widow went to reside with the present members of the family at Great Torrington, and died in 1864, in the 96th year of her age; and Miss Glubb believes that the Raleigh letter was brought by her amongst some other papers.

Some time after the death of Richard Duke in 1775, the family estates were sold to Denys Rolle, of Bickton, Esq.;⁶ and it is not unreasonable to believe that the letter was given by Richard Duke, some time prior to his decease, to the Bickton rector, the Rev. John Glubb, passing afterwards into the possession of his brother. In point of time, this seems to agree with the statement of Polwhele in 1793, already noticed.

The letter was found enclosed in a wrapper, the paper of which was of a different size and texture to that of the former. That it was comparatively modern is shown by the watermark—the figure of a seated Britannia, surrounded by a pale, with a gate in front, and above the words "Pro Patria." It bears this endorsement:

"S^r Walter Rawleighs letter
to my Gr^t Gr^d Father."

A fac-simile of the photographic copy of the letter itself is shown in the accompanying illustration. The paper on

⁴ The building still remains in close proximity to the north side of the church.

⁵ Dr. OLIVER'S *Ecc. Antiq. of Devon*, ii. (1840) 102.

⁶ Edwards, in his *Exmouth*, 117, states this took place in 1780; but Dr. Oliver (*op. cit.* i. 133) assigns it to 1785.

which it is written is of 4to size, and is destitute of watermark. There is, however, nothing in its appearance to contra-indicate the period assigned to it—1584.

The illustration fairly depicts the well-marked creases formed in folding the letter—a matter of some importance, as will be presently noticed. They have been the cause of some difficulty in deciphering some portions of it; nevertheless, the following transcript is believed to be accurate, there being one word only that has escaped recognition:

"Mr Duke—I wrote to Mr Prideux to move yow
for the purchase of hayes a ferme som tyme
in my fathers prosession. I will most willingly
give yow what so: ever in your conscience
yow shall deeme it worthe, and if yow shall
att any tyme have occasion to vse mee yow
Shall find mee a thanckfull frind to yow
and youres. *I have dealt wth Mr Sprinte
for suche things as he hathe att colliton
and ther abouts and he hath pmised mee
to dept wth the moety of otertowne unto
yow in consideration of hayes accordinge
to the valew and yow shall not find mee
an ill neighbore unto yow here after.* I
am resolved if I cannot intreat yow to build
att ~~otteto~~ [sic.] colliton but for the naturall
dispositio' I have to that place being borne
in that howse I had rather seat my sealf
ther then any wher els *this leving the
matter att large unto [?]* Mr Sprint I take
my leve resting redy to countervaille all
your courteses to the vttermost of my
power Court the xxvj of July 1584

"Your very willing frinde

"in all I shalbe able

"W. Ralegh."

If the handwriting, as shown in the accompanying illustration, be compared with that contained in some of Sir Walter's other letters, written about the same period (and a comparison has been made with the fac-similes of three of the years 1586, 1587⁷), although at first sight there appears to be a good deal of variation; if the words, and even the separate letters, be examined, the conclusion must be arrived at that they were penned by the same hand. The only apparent exception is in the formation of the letter *p*, but,

⁷ Of the respective dates of March 29th, May 29th, 1586, and October 8th, 1587. The letters are printed *in extenso* in Edward's *Life of Raleigh*, ii. 33-35.

singularly enough, this letter is written in a different manner in each of the other documents.

In the signature "W. Raleigh," the letters are much more formal in character than in the generality of those known to be his. This was apparently due to the exercise of greater care than was customary with him in writing it. If, however, his signature to the remarkable letter he addressed to the Earl of Leicester, dated March 29th, 1586, be compared with the one now under description, the close resemblance to each other is at once apparent, showing the careful formation of each letter, especially of the terminal *h*, with its curious flourish.⁸

The letter is much longer than that of the copies previously known, and given in detail on a previous page. In the foregoing transcript all the portions in italics are additional. Why they were omitted by Aubrey and others is not known as a matter of certainty, but the cause of such omission may not be so far to seek as anyone might at first suppose. An examination of the fac-simile will show that the various creasings, markings, and stains, have led to the partial obliteration of some of the words and sentences, so as to render their deciphering a matter of trouble and difficulty. The paragraphs containing these doubtful passages would be meaningless without them. It would therefore be an easier task for the transcriber to omit them altogether, providing that the sense was not greatly violated thereby; and this he appears to have done, as I believe a collation of Aubrey's copy, with the fac-simile of the original letter, will amply demonstrate.

The portions omitted from the copies contain the following additional items of information :

1. The advantages to be gained by the Duke family "in consideration of hayes."

2. The employment of Mr. Sprint as an intermediary. Although he must have been a person of position and influence, enquiries have hitherto failed to learn anything respecting him.

3. A mention of Otterton twice—once as a singular mistake for Colliton.

⁸ A fac-simile of the postscript of this letter, with that of Raleigh's autograph, will be found in J. G. Nichols's *Autographs of . . . Remarkable Personages Conspicuous in English History, &c.* (1829), plate 24, No. 8. Here is a transcript of it: "The Queen is in very good tearms with yow and thank be to god well pacified and yow ar agayne her Sweet Robyn." The whole letter is printed by Edwards (*Op. cit.* ii. 33-4), but, to judge by the postscript alone, is not verbally correct.

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are expecting if I cannot meet you I will
at all other position But this is a natural
disposition of mine to get things very common
- to get people I want to put in a book
that you can see all this but I am
~~not at all~~ ~~happy~~ ~~to~~ ~~write~~ ~~you~~ ~~about~~ ~~it~~ ~~at~~ ~~all~~
I know nothing only and remember to all
your hopes to get them out of me
with the society of July 1884

Yours Very Sincerely
all 1/1884

W.R. Allen

Apart from the original letter being more interesting from a knowledge of these additions, they serve to point out with much greater force, the extreme desire of Raleigh to become the possessor of his paternal home.

A full consideration of the various points into which I have entered—not omitting the curious endorsement of one copy by a member of the Duke family, and of that now claimed to be the original, by another—must, I think, result in the conviction, that the letter now under description was penned by Raleigh himself. Written some time after the death of his father, we cannot help admiring the strong feelings that prompted him to obtain possession of his humble birthplace, at a time when he was high in Court favour. A remarkable statement made by Sir J. Pope Hennessy,⁹ appears at first sight to corroborate this feeling of Sir Walter for the home of his boyhood. He remarks that “the only house in which he [Raleigh] lived that has survived the burnings, &c. . . . that swept away so many buildings in Ireland, is the Warden’s house of the College of Youghal, to which he took a fancy because of its resemblance to the old manor-house at East Budleigh, where he was born.” He does not, however, support this by referring to any authority, and possibly it may have been a mere flight of imagination on his part. Little can be said with regard to its resemblance to Hayes at the present period.¹ We know, however, that Sir Walter’s application was unsuccessful, “from that jealous disposition which can bear no brother near the throne. They did not chuse, we are told, to have so great a man for so near a neighbour.” Polwhele,² from whose work this extract is taken, does not give any reference to the work quoted by him; and in the absence of any authority we are at liberty to doubt the correctness of the assertion.

As a corollary I may add the words employed by Mr. Pengelly, in his account of the copy of Raleigh’s letter, printed in the *Monthly Magazine* for August 1st, 1804: “The letter . . . if trustworthy, settles completely the somewhat disputed question of Sir Walter’s birthplace.”³

⁹ *Sir W. Raleigh in Ireland* (1883), 140.

¹ There are woodcut illustrations of the Youghal residence in HALL’s *Ireland* (1841), i. 86; O’FLANAGAN’s *Blackwater* (1844) 16; and “Life of Spenser,” by Dr. GROSART, in *Works* i. 171.

² *Op. cit.* ii. 219.

³ *Trans. Devon. Assoc.* xiii. 308. The *Monthly Magazine* version is similar to the one quoted from the Ballard MS.

I now pass on to describe Hayes, or Hayes Barton, as it is now generally termed. (This is the name assigned to it in the recently published Ordnance Map of the District.) It is a farm-house, called by some, without apparent authority, a manor-house,⁴ situated in the parish of East Budleigh, about one mile due west from the church. Access to it is by a lane leading, in a westerly direction, out of the main street of the village, a short distance from the church. This, after passing the old vicarage, undulates along the sides of the valley, until it arrives at a hollow in which the house is situated. This hollow serves to conceal it from observation, and to shut it out, as it were, from the rest of the world. In the time of Sir Walter "the situation can have been scarcely more rustic or more secluded than it is in 1866."⁵

The slopes of the hills—all of common land—that form the water-parting between the valleys of the Exe and the Otter, commence to rise immediately beyond the house, and bar the further progress of the valley to the west. From them small streams trickle down, and after entering a large pond, emerge as a single brook in front of the house, which then finds its way down the valley, unites with the larger stream that passes through Yettington, and, after traversing the village of East Budleigh, terminates in the river Otter.

The house faces due south, and rising abruptly a short distance from it is a hill covered with oaks, known as Hayes Wood. In Sir Walter's time it probably presented much the same kind of appearance that it does now. On some rising ground to the north, and distant about a quarter of a mile, stands the small village of Yettington, where, in 1608, the Rev. John Conant, D.D., Rector of Exeter College, and Vice-Chancellor of the University of Oxford, was born. The building is situated at the end of an enclosed garden, and consists of a central portion, with two wings standing out at right angles to it in front, the one to the east being advanced about 4 feet 6 inches beyond its companion. It has a ground and upper floor. The roof is of thatch, or, to use a Devonshire expression, is "covered with reed."⁶ There is a projecting central porch, with a small room over it. Edwards (*Op. cit.* i. 10) affirms the house to have three gables; but in this he is scarcely correct, as a reference to the accompanying photographic illustration (kindly taken

⁴ *Vide* Hennessy's work just quoted, also Edwards, *Op. cit.* i. 10.)

⁵ EDWARDS, *Op. cit.* i. 10.

⁶ "REED, unbruised straw. *West.* Hence to reed or thatch a house."—HALLIWELL'S *Dict.*

for me by Mr. P. Ashenden, of Canterbury), will show. The two wings are gabled; there is a small gable over the porch, and two dormer ones over the windows on either side of it. The same authority alludes to the "heavily mullioned windows," but this is a mistake. All the windows are comparatively modern, and are formed of two or three lattice lights, separated by narrow wooden mullions. There are two exceptions to this—the window over the porch, and one to the dairy on the ground-floor, north aspect. The former has three and the latter four lights. Here the mullions have beaded mouldings, are broader, and a broad frame surrounds the whole of the window opening, encroaching upon the space. Probably all the original windows had similar frames, the removal of which permitted the lights to be of larger size. All the frames, both of the old as well as of the new work, are of oak. Excepting the one over the porch, all the sills are of stone of modern insertion.

The picturesque appearance presented by the front of the building is mainly due to the porch. This contains a wooden seat on either side, beyond which, and in the same plane as the main wall, is the entrance door, of stout oak, studded with large iron nails, and 3 feet 10 inches wide. It retains the original hinges and fastenings.

The walls are of cob, the external ones being about 2 feet 8 inches thick, and rest on a stone foundation. The chimney-stacks are all on outside walls, and three of them project beyond the face of the building. They are built of stone, as is customary and necessary when cob is used for the main structure. The quoins are of ashlar work of red sandstone, the remaining portions of rubble, in which flints and various kinds of stones are embedded. The fourth differs from them in one respect. A reference to the elevation, as well as to the ground plan, shows that the one at the end of the east wing does not project, being level with the main wall. Feeling convinced this construction was not the original one, I instituted enquiries, and ascertained that the chimney and entire end wall had been rebuilt in 1862, and, it was believed, on the former foundations. This would at first rather indicate that the extension had been made at an early date; but considering that the chimney, if originally constructed at that end of the building, would project beyond the main wall similar to the other three, and that the amount of projection beyond that of the opposite wing would not be beyond its present line, it is reasonable to conclude that the chimney was constructed originally like the others, and the main wall

advanced to the same plane either at the last or some previous restoration. The ground-floor is of lime-ash.

"What the tourist now sees . . . is but a portion of the old building," according to Edwards; but a careful examination of the structure, as well as of the general plan, has led me to the conclusion that, excepting the alteration at the end of the east wing already noted, the present structure represents the old structure in its entirety. The external walls show no trace of any extensions, and the position of the south porch, and the chimneys on the west and north aspects, point out that none could have taken place in those directions. Moreover, the building is almost symmetrical. In the case of the north wall there is another proof. There is a recess in that of the ground-floor shown in the plan, and two upstairs; these are splayed like the windows. There are no external indications of what they were originally, as the wall is now roughcast; but the roof-thatch over each of the upper ones is arranged in a bowed form, and shows that they acted as pents to the windows that formerly existed there. To this I may add, that in the wall of the chimney at the west end of the north side there is a stone, inscribed:

"R. D.
1627."⁷

It is built in the chimney just below the line of the roof, and above a set-off. As the lower portion is of an earlier date than the upper, it appears probable that the date records the restoration of the upper part, and perhaps of general repairs to the building. The general character of the structure is that of a small but good farmhouse of a late Tudor period. Whether the interior has been "much altered" in modern times, as Edwards inclined to believe, is rather questionable. It is very similar in its plan (excepting in two additional rooms at the back,) and simple arrangements to "the modell of a plaine Country man's house," depicted by Gervase Markham in his *English Husbandman*, published in 1613.⁸

The ground plan⁹ shows a passage leading from the front to the back-door, but the partitions forming it are comparatively modern. It is probable that the central portion formed

⁷ This would probably be the Richard Duke, who is recorded in the *Visitation of Devon*, in 1620, to have been then twenty years of age. A sketch of it is given in the accompanying plate.

⁸ P. 24 of edition of 1635.

⁹ Shown in the annexed plate, drawn by Mr. Penny, and for which I am indebted to Mr. R. H. Lipscomb.

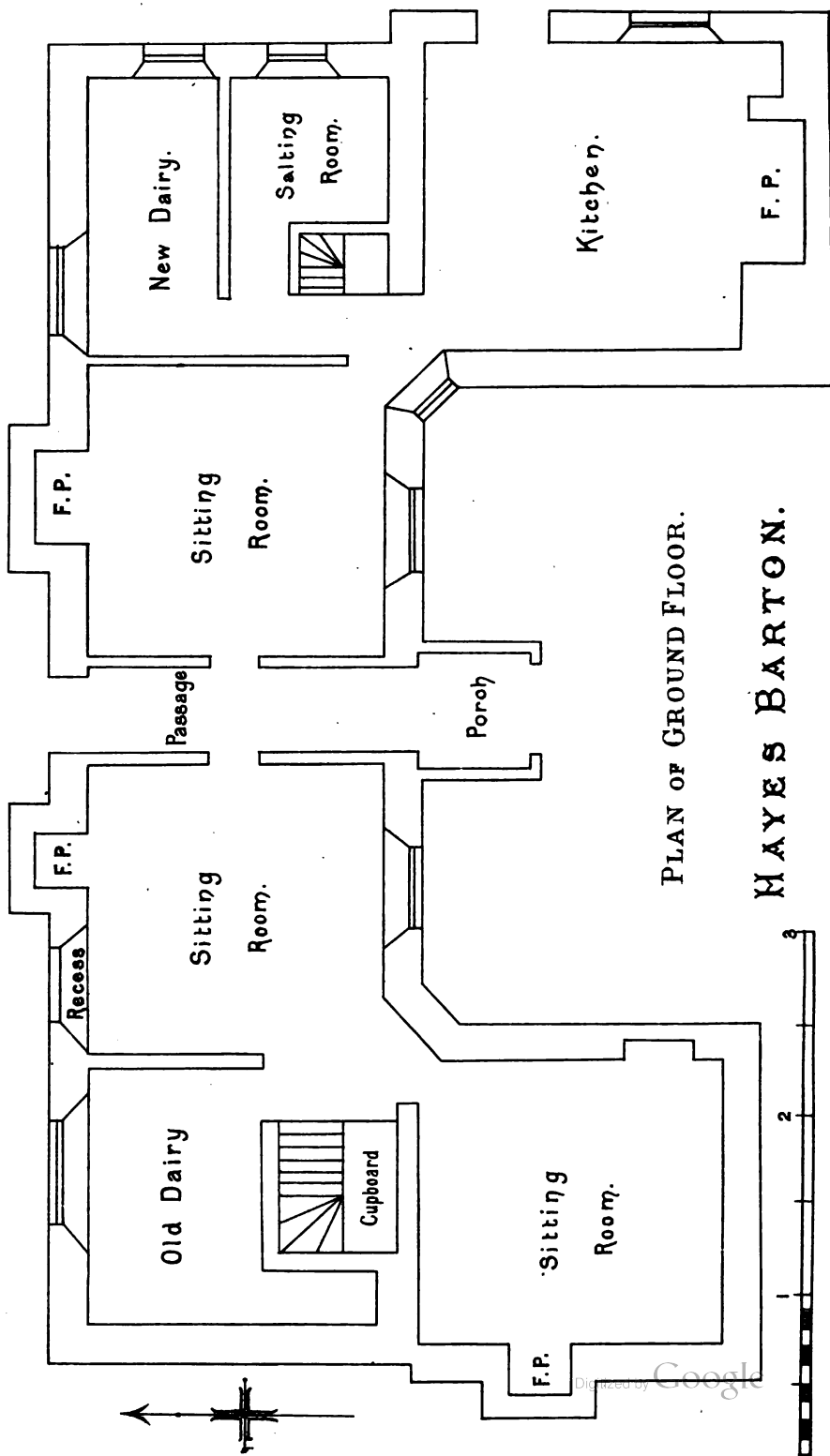
INSCRIBED STONE. N.W. CHIMNEY.



HAYES BARTON.

Inscribed Stone on Chimney Stack, at
back of House, at first floor level.

Taken July 6. 1888.



PLAN OF GROUND FLOOR.

HAYES BARTON.

one large room or hall, with two fireplaces, partitioned off when required by temporary screens, and was employed as the dining and general room for the family and guests. The front room to the west was no doubt reserved as private for the family, or for honoured guests. The kitchen offices were always on the east side. All the ground-floors have low ceilings—ground to ceiling measuring 7 feet 6 inches only. In the upper floor greater height is obtained in the roof, the rough supports of which project into the various rooms. The room pointed out by tradition as being the one where Sir Walter was born is on the first floor, west end, facing south.¹

We have reason to believe that Raleigh spent the greater part of his early life in this place, and until he went to Oxford. Kingsley pictures him as "a daring boy, fishing in the grey trout-brooks, or going up with his father to the Dartmoor hills to hunt the deer with hound and horn amid the wooded gorges of Holne, or over the dreary downs of Hartland Warren, and the cloud-capt thickets of Cator's Beam, and looking down from thence upon the far blue southern sea, wondering when he shall sail thereon to fight the Spaniard, and discover, like Columbus, some fairyland of gold and gems."² But there were three places in the neighbourhood of Hayes, probably but little known to Kingsley, which Raleigh was more likely to frequent than the distant Dartmoor. The *first* was the large tract of moorland—large now, but far larger in his day—lying immediately adjacent to his paternal home, where he could wander undisturbed, and commune with his own thoughts; for he was not the kind of lad who would be likely to make many village associates. The *second* was Exmouth, distant about six miles. His father was in some manner connected with the commerce of that place.³ The *third* was the bay of Budleigh-Salterton, or Saltern, as it was known in Raleigh's time, and so named in old maps, from the salt-making places or pits that formerly existed near the mouth of the river Otter,⁴ about two and a half miles in a direct line from Hayes, by the path Raleigh would pass through Hayes Wood.

How he obtained his early and intimate knowledge of the sea, and of naval pursuits generally, has always been some-

¹ There is an interesting account of the house and its surroundings in *A Londoner's Walk to the Land's End*, by W. White (1855), 98, 99.

² *Sir Walter Raleigh and his Time*. Collected Works, xvi. (1880), 87, 88.

³ *Trans. Devon. Assoc.* xv., 165, 166.

⁴ *Salt-ern* is an Anglo-Saxon word, *-ern* or *-ærn* signifying a place.

what of a puzzle to his biographers. His "education," writes Gosse, "embraced an extraordinary knowledge of the sea, and in particular of naval warfare. It is tantalizing that we have but the slenderest evidence of the mode in which this particular schooling was obtained."⁶ Although alien to the object of this paper to consider the manner in which he obtained this knowledge, I may be pardoned for making the following few remarks upon it. There can be no doubt that in early as well as in late life he grasped every opportunity of advancing his knowledge in all subjects. Of those more especially relating to the sea, he had abundant opportunities of gaining information, during his repeated visits to the two places just mentioned, as well as to the ancestral home at Fardell, a short distance from Plymouth. His interest must have been frequently excited, and his feelings and imaginations quickened, by the accounts that he must have heard described and discussed of all that pertained to sea life, of the adventures and wondrous tales of those who had visited distant lands, not forgetting the bitter animosity expressed against Spain for its injustice and cruelty to English seamen—a feeling which tintured the whole life of Sir Walter. This idea (combining as it does that in the concluding passage in the quotation from Kingsley's work) has been embodied in the well-known picture by Sir J. Millais, entitled "The Boyhood of Raleigh," and exhibited at the Royal Academy in 1870—a picture of special interest to Devonians from the circumstance that it was painted at Budleigh Salterton (of the three figures represented in it, the two boys—the future Sir Walter and his brother—were likenesses of the artist's own sons, the third—a sailor—of an inhabitant of the place).

Let me take the advantage of this opportunity to advert to two points of interest in connection with Hayes.

1. The *first* relates to its owners. According to Sir W. Pole,⁶ "This hath always contynewed in the name of Poer and Duke. Bartholomew de Poer held it in Kinge Henry 2 tyme." Cicely, the daughter and heiress of his descendant, Roger Poer, "was married unto Richard Duke."⁷ Over the porch of the manor-house at Otterton, formerly occupied by the Duke family, is yet preserved the coat of arms sculptured in stone, containing the arms of Duke and Le Poer quartered.

⁶ *Raleigh* (1886), 6.

⁶ *Op. cit.* 153.

⁷ At page 523 Pole states it was *Thomas* Duke; while Mr. P. O. Hutchinson (*N. & Q.* 3rd s. vii. 447) affirms it was *John* Duke. In his *Visitations of the County of Devon*, Col. Vivian attempts to cut the gordian-knot by the simple omission of the Christian name.

At first named Poerhayes, Poer's Hayes, or Power's Heys,⁸ it became Dukeshayes after the marriage with the heiress of the Le Poer family. That it long retained the former name after the latter event had taken place is apparent from Westcote,⁹ in his account of the family, commencing, "Duke, of Poer-Hayes in Budleigh." The second name became disused after the property had passed into the hands of the Rolle family, in the latter part of the last century. Since then it has been known as Hayes, or Hayes Barton.

2. The *second* point concerns the origin of these names. *Hays* or *Hayes* is from the A.S. *haga*, a hedge, and was originally applied to a plot of ground enclosed by hedges; or perhaps, in some cases, that was characterised by their presence.¹ According to Halliwell, *hay* continues in Norfolk as the name for hedge; and Sir W. Blackstone, in his *Commentaries*, employs it in the same sense, according to a quotation in Latham's edition of Johnson's *Dictionary*. In Yorkshire *hay* is applied to "ridges of land as distinct boundaries;"² while in Cheshire "it is frequently met with in old deeds, having the meaning of wood,"³ an interpretation it yet bears in Macclesfield. In this latter case, the primary idea of enclosure appears to be lost. The Rev. I. Taylor interprets "*haigh* or *hay*" as "a place surrounded by a hedge, and appears to have been usually an inclosure for the purposes of the chase;"⁴ but it is doubtful whether the latter assertion be correct, certainly so far as to its being the general rule.

In a Devon Directory of 1856, Sir J. Bowring found fifty-four examples of the use of *haye* or *hayes* for place-names, "associated" in Exeter "with both Saxon and Norman adjectives—Northernhay . . . Bowhay, Shilhay, Linhay, and others."⁵ A large number will be found in Sir W. Pole's *Devon* with a prefix, generally of a surname, presumably of the first possessor; e.g. "the cradle" of the Drake family was Spratshayes. The word "hayes" by itself is used to designate places and parishes in this and other counties. One in Middlesex is also termed *heese*. In the parish of

⁸ The last quoted from the *Bicton Muniments* by Edwards, *Exmouth*, 128.

⁹ *Devonshire* (1845), 559.

¹ *Haga* is thus interpreted in Bosworth's *A.S. Dictionary*: "A hay, hedge, haw, a small quantity of inclosed land, a dwelling-house."

² *Whitby Glossary*, by F. K. Robinson. E.D.S., 1875.

³ *Cheshire Glossary*, by J. Holland. E.D.S., 1885.

⁴ *Words and Places* (1878), 81.

⁵ "Language, with Special Reference to the Devonian Dialects," in *Trans. Devon. Assoc.* i. part 5, p. 34.

"St Thomas over Exbridge . . . lieth Hays sometyme a p̄bend of the Castell of Exon."⁶

That *Hayes Barton* was therefore originally an enclosure by means of a hedge—on the flat, or on a bank (the latter a very old Devonshire practice)—we may fairly conclude. Remembering also that, as even at the present time, it adjoins the extensive moorland, it is possible that the name was in the first instance employed to show that it was an enclosure from this great tract.

Barton, or *Berton* (called also *Barken* and *Barkin* in some counties), has, like its companion *Hayes*, an Anglo-Saxon origin, being derived from *bere* (barley) and *tún* (enclosure). According to the Rev. Sir W. Cope, "Mr. Barnes gives the derivation of the first syllable from A.S. *beor*, a grange, not from A.S. *bere*, barley, as in Akerman; but the A.S. *beor* seems to lack authority."⁷ We scarcely need, however, to look beyond the first-named rendering, supported, as it is, by the powerful authority of Professor Skeat. It is a very common place-name throughout England, and equally common as a surname. In Devonshire, Sir J. Bowring found twenty-three examples in the Directory of 1856, already noticed.

Its primary meaning was simply a *rick-yard*; and in Wilts, *circa* 1700, according to Bishop Kennett,⁸ it was known as *rick-barton*, the redundant *rick* being added probably from the meaning of the word *barton* being lost sight of. The Rev. I. Taylor affirms "in many parts of England the rickyard is called the *barton*; that is, the inclosure for the *bear*, or crop which the land bears."⁹ Now *bear* is a variant of *bere* (barley), and this may have been the intended meaning of the author; but in the paragraph it implies *any* crop, and this is a new and, I believe, erroneous rendering of the word.¹ In the new *Philological Dictionary*, now in course of publication, the word has five separate meanings. Of these, three are obsolete. The fourth, rendered "a farmyard," is regarded by the editor (Dr. Murray) to express "the regular modern sense." The fifth is defined as "a demesne farm; the demesne lands of a manor, not let out to tenants, but retained for the

⁶ Sir W. Pole, *Op. cit.* 237. A full description of "Hayes or Heghe," with its list of prebendaries, will be found in Dr. Oliver's *Ereter* (1861), 194-200. Mentioned also in *Bishop Bronescombe's Register* (edited by the Rev. F. C. Hingeston-Randolph) as "Heghes" (139).

⁷ *Hampshire Glossary*, E.D.S., 1883.

⁸ Glossary in Lansdown MS., 1083.

⁹ *Op. cit.* 39.

¹ In the *Book of Husbandry*, published in 1534, the author (Fitzherbert) states, "There be thre maner of barleys; that is to say, sprot-barleye, longe-eare, and beare-barley" (in the same section called also *bere-barley*); in the last-named *beare* is a redundant word.

lord's own use;" and the quotations from authors illustrative of it relate mainly to Devon and Cornwall. But in Devonshire it has also another signification, and an example of this will be found in the following extract from W. Marshall's *Rural Economy of the West of England*, published in 1796, and contained in a description of the farms of West Devon:

"The sizes of farms are, as they ought to be, extremely various. Bartons (a name which perhaps was originally given to demesne lands, or manor farms, but which now seems to be applied to any large farm, in contra-distinction to the more common description of farms) are generally of a full size, as from two or three to four or five hundred acres of culturable lands." (i. 101.)

But about 100 years prior to the appearance of Marshall's work Bishop Kennett (in the Glossary already referred to) had written, "In Devonshire they call a great farm a *Berton*, a small farm a *Living*;"² and this use of the word *Barton* is still retained in the county. I learn this from Mr. R. H. Lipscomb, the agent of the extensive Rolle estates, as well as from our associate Mr. John Shelly, both of whom are well acquainted with the folk-speech of this county. Neither of them, however, recognizes the word *Living* as a Devonshire one. This word *Living* is in some respects a singular term. In Halliwell's *Dictionary* its explanation is "a farm," the term being used in Leicestershire; but in the glossary of that county³ it is not mentioned. In W. Marshall's *Rural Economy of the Midland Counties* (1796) it is described as "a tenement, or farm. The common field townships were divided into a certain number of 'livings.'" (ii. 383.) (It is absent from all the county glossaries of the English Dialect Society.)

Devonshire appears to have been as much the home of the *Bartons* as of the *Hayes*. As connected with this, it is certainly a matter of interest to know that the word *Bartoner*, denoting a husbandman who farmed a Barton, is contained in the *New Philological Dictionary*—probably the first one that has included it in the list of English words—and though but one quotation of its use is given, this seems to have sprung from a Devon source, and is thus alluded to in Jacob's *Law Dictionary*, art. *Berton*:

"*Bertonarii* were such as we now call Farmers or Tenants of *Bertons*; Husbandmen, that held lands at the will of the lord—*Cum Bertona terris & tenementis, quæ Bertonarii modo tenent ad voluntatem*. Chart. Johan, Episc. Exon. 24 Dec. ann. 1337."

² In Jacob's *Law Dictionary* (1732) it is assigned to "some Parts of the West of England."

³ By Rev. A. B. Evans and Sebastian Evans. E.D.S. 1881.

This was John de Grandisson, Bishop of Exeter.

It cannot fail to be noticed that both words, *Hayes* and *Barton*, denote enclosures; and when employed in conjunction, as in the instance of Raleigh's birthplace, the second appears to be superfluous—a redundant word—especially when, according to an entry in Halliwell's *Dictionary*, *Heyse* (for Hayes) is the "same as Barton." But this redundancy is lost sight of when we consider that *Hayes* is the original name of the place, while *Barton* has been added in modern days, as a Devonshire provincialism, to show that it was a large farm.

The principal object of the foregoing remarks has been to point out that we are now, for the first time, in possession of positive evidence that Sir W. Raleigh was born at Hayes, whereas previously it was little better than a well-founded belief. In adding a full description of the place itself, with some collateral observations on its owners, and the origin of the name of the place (to which I was led by the circumstance that neither had received much attention in his biographies), I trust I may not have been considered tedious.

I may note that whereas very few relics that were associated with Raleigh's personality or history have been preserved to us, there is one remarkable exception—his birthplace yet remains; and it is a great satisfaction to know that the gentleman to whom it belongs employs all the means in his power to preserve it in its integrity.

I take it to be the duty of every Devonian, to bring forward any new facts or information he may have gleaned respecting the lives of any of the great men of this county, and it is this spirit that has induced me to submit the present subject to the members of the Association.

In conclusion, allow me to ask the members of this Association one question: Would it not be a grateful tribute to the memory of one of the greatest men of this county, now that Hayes has been demonstrated to be the spot where he was born, to have a small tablet fixed over the entrance porch with this simple inscription—

THE BIRTHPLACE OF RALEGH.

THE ORIGIN OF AXMINSTER CARPETS.

BY JAMES HINE, F.R.I.B.A.

Read at Tavistock, August, 1889.

DEVONSHIRE was, and has ceased to be, a great manufacturing county; which is tantamount to saying, I think, that there was more enterprise and activity amongst the people of these western parts in the olden time than the present population develop.

Exeter, Tiverton, Totnes, Ashburton, and other towns, were busy manufacturing centres, where kersies, fine hose, and serges were largely made; and even in this electric-lighted century we should be ready to recognise thankfully that we are indebted to the Cistercians of the so-called "dark ages" for the introduction of the only one of these manufactures which has continued to this day in Devon. Not only were the great factories busy hives, but the private spindles and looms, in the homes of cottagers throughout a large portion of the county, showed what a comparatively small proportion of "idle hands" were available for a certain mischievous agency. There was a very general reliance on and employment of *local* talent and skill in every branch of industry and art.

The armourer was the most renowned of ancient craftsmen, because he was the fashioner to the human figure for all heroic exploits.

In almost every parish there was a clever smith, whose brawny arms worked for all the neighbours round about, but whose most ingenious and beautiful wrought-iron work was to be seen in the church and castle—a kind of work which few village smiths can now do, and which is centralized in about a dozen big workshops in all England.

In the towns were workers in gold and silver—not merely nominal gold and silversmiths, of which we have such a multitude, but the actual makers of ornaments for knights and ladies, church plate, and bowls, cups, and spoons for private houses. Mr. Brooking Rowe has discovered that even in the little town of Plympton there were goldbeaters in the middle ages. There was a celebrated silversmith, John Jons by name, at Exeter in the sixteenth century.

Every town had its mechanist and clockmaker. There was a famous clockmaker, named John Barnet, at Tavistock, rather less than two hundred years ago.

“That is best which liest nearest” was the motto of our forefathers, who, as a rule, built their churches and houses of local stone and timber, and employed the most skilful man of the parish—Snug, the joiner, generally—as foreman.

We think with pride of Cookworthy’s china manufactory, in the last century, at Plymouth, and then with regret at its removal to Bristol. Nor can we forget the subsequent reversion to barbarism when the commonest pots and pans were made on the spot where Cookworthy’s modelling and Bone’s enamelling were so exquisitely performed. But we rejoice in the successful *revival* of the ceramic art, in different parts of Devon, which has resulted in the production of a large variety of articles of great beauty, both in form and colour. Indeed, this is almost our only note of congratulation, that whilst the manufacture of textile fabrics has nearly died out (except at brave little Buckfastleigh), the ceramic art not only flourishes but progresses in Devonshire potteries.

The town of Axminster, which it must be admitted has now a somewhat sleepy appearance, a century ago found busy employment for a considerable portion of its population in the manufacture of the most durable and beautiful carpets ever made in England, and which almost vied in excellence with the productions of Turkish and Persian looms. The inventor and first manufacturer was Mr. Thomas Whitty. His great-grandson, my cousin, Mr. Henry Heudeboureck, of London, has shown me Mr. Whitty’s manuscript account of the origin of Axminster carpets, which I am not aware has ever been printed, and which, though a very simple record, I have thought might be of some interest to members of this Association.

Previous to his discovery in carpetry Mr. Whitty was a cloth manufacturer.

“It was in the year 1754,” says Whitty, “that, being in London, I was at the house of Mr. Treck, an ironmonger,

when I saw in his warehouse several bales which, appearing not to contain any goods in his way of business, I enquired what their contents were. He told me they were Turkey carpets which he had imported, and, if I had the curiosity to look at it, he would show me one of the best and largest Turkey carpets in England. Accordingly he took me into a large room, and showed me a carpet thirty-six feet by twenty-one, the sight of which greatly surprised me. I had some little knowledge of figure weaving, but could not conceive by what means a carpet of so great a breadth could be woven in figure without a seam in it. After I had seen this carpet I could not keep it long out of my mind, without, however, being able to form the least idea of the method of doing it.

"After a long time of puzzling to no purpose I awoke one morning with a strong impression on my mind that I knew a method of doing it, and if I could examine a Turkey carpet I should see if my ideas of it were right. Accordingly I communicated my thoughts to my wife, and asked her if she knew whether there was any Turkey carpet in our town. She told me Mrs. Forward had one that I might see, so after breakfast I went up to Mrs. Forward's, and desired a sight of her carpet, which she readily granted.

"By the sight of this carpet I found that my ideas were in some measure right, and on a thorough examination of the structure of it I was convinced of the probability of doing it, although still much at a loss, particularly as to working a carpet of so great a breadth.

"After this my mind was almost continually employed about it, and my spare time in making little trials in one of my broad looms. At length, on the 25th April, 1755 (being our Fair day, while our weavers were keeping holiday), I made in one of my looms a small piece of carpet, about seven or eight inches square, resembling as near as I could the Turkish carpets. This further convinced me of the possibility of doing it, but not of doing it quickly enough to answer any purpose in trade. Soon after this I went to London, taking with me my little essay in carpetry, and showed it to some of my friends there, who all agreed that if I could make carpets like the specimen and sell them at the price of Turkey carpets, it would become an interesting branch of trade. But there lay the difficulty which was yet undiscovered—what I could afford to sell them for, as all my ideas hitherto went no farther than a horizontal loom, which would have been a very spare and tedious way of working;

but this difficulty Providence soon removed in an unexpected manner.

"Whilst I was in London I saw an advertisement from Mr. Parrisot, who carried on a manufactory of carpets at Fulham (which had been lately introduced from France under influential patronage), complaining of the want of due encouragement from the public, and saying that if he was not better supported he must decline the manufacture, and the youths who were apprenticed to it be returned to their parents.

"The reason of this I afterwards found to be that his carpets, though deemed handsome, were sold at such an exorbitant price that few cared to buy them. This afterwards turned to my great advantage when I could serve them much cheaper.

"This manufacture I had scarcely ever heard of, but considering if I could obtain a sight of it (as it was on the same principle as I was desirous of attempting, though upon a much finer scale), it might be of essential service in removing the difficulties I yet laboured under, and I determined to attempt seeing it.

"Accordingly I left London for Fulham, to breakfast there; and putting up at an inn, ordered a pot of coffee, and chose to have it in the kitchen, that I might be in the way of hearing anything that was talked of. I had not been there long before two men came in to have a pot together, and fell into some discourse about the carpet manufactory, which gave me the wished-for opportunity of enquiring about it, when one of the men told me he had a son who was an apprentice to Mr. Parrisot, and mentioned the uncertain circumstances they were under. I then asked him if strangers were admitted to see the work; to which he answered he did not know; but if I desired to see it he would go and ask his son. He soon returned, and acquainted me that I might be admitted, and that he would conduct me there. Accordingly I obtained a view of everything I wanted, by which all remaining doubt was removed from my mind, and I was thoroughly satisfied I could go on with the manufacture, only the Fulham carpets were so much finer than I had formed any idea of, that I had not at that time the least idea I should ever rival them.

"When I came back to Axminster I immediately began to prepare a loom and materials for making a carpet, and on Midsummer-day, 1755 (a memorable day for my family), I began the first carpet I ever made, taking my children and their aunt Betty Harvey to overlook and assist, for my first

workers. When the manufacture was thus begun many gentlemen came out of curiosity to see it, and professed their desire to encourage it by ordering carpets. Among them one of the first was Mr. Cook, of Stape, near Beaminster, who ordered a carpet from the first pattern. When I took this carpet home I met Mr. Cook at Beaminster, and he desired me to open it to show to a gentleman then with him. It was Mr. Twiniker, of the Temple, London, steward to the Earl of Shaftesbury. He was much pleased with the sight of it, and told me he should be glad to render me all the service he could for the encouragement of a new manufactory. Accordingly he mentioned it to Lady Shaftesbury, who was a liberal encourager of arts and manufactures. Her ladyship desired him to request Mr. Cook to spare her that carpet, saying she wished to have the first carpet of the manufactory, although she might expect to have a much handsomer one when it was come to greater perfection. Lord and Lady Shaftesbury were so well pleased with that carpet that they and their family have been since some of our best customers.

"In the summer of 1756 I received an order from Mr. Twiniker, he enclosing at the same time the first proposals of the Society for Promoting Arts and Sciences, of giving a premium for the encouragement of making carpets in England on the principle of Turkey carpets, with a hand pointing to the proposals of giving £30 to the person who produced the best carpet on that principle not less than fifteen feet by twelve; and £20 for the second best of the same dimensions, Mr. Twiniker adding, 'It could do you no harm to receive this premium next year.' Accordingly, in March, 1757, I produced a carpet to that noble Society sixteen feet by twelve and a half, which I valued at £15. Mr. T. Moore, of London, produced another of the same dimensions, which he valued at 40 guineas. The Society were convinced, on examining both carpets, that although Mr. Moore's was made of the finest materials, yet that mine was best in proportion to its price: They therefore recommended to Mr. Moore and me to take £50 and divide it equally between us, which we agreed to do. I sold my carpet to Boucher Cleeve, Esq., who afterwards parted with it to Mr. W. Compton, who was one of the dealers who were desired by the Society to examine the carpets and give their opinions as to the merits of the claimants. Mr. Cleeve told me he bought it for the sake of promoting the new manufacture by showing it to his friends, but in Mr. Crompton's shop a much greater number of the principal people would see it than in his house. When Mr.

Crompton paid me for it, it was agreed for me to make as many as I could, to send to his warehouse. In consequence of this I had during the ensuing year orders for as many carpets as I could procure hands to make.

"In the summer of 1757 the Society again offered their premiums, with this restriction, 'That those who had already received premiums for making carpets could not be admitted as candidates unless they produced three carpets at least of the aforesaid dimensions.' In consequence of this advertisement I endeavoured to produce three carpets, and as Mr. Moore's was not excluded on account of the high price of his carpet, I made one of mine a fine one, at twenty-four shillings a square yard, in order to show that I could make a better carpet than Mr. Moore at a much less price. These carpets were exhibited in March, 1758, when Mr. Pasavant, of Exeter, was my only competitor. He produced a fine carpet, about sixteen feet by twelve, made by some of Parriset's French hands, which he valued at 80 guineas. Its price was so exorbitantly high that it occasioned some debate in the Society; but as their proposals were 'for the best carpets produced,' and not for the best in proportion to price, the Society again recommended an equal division of the premium, which Mr. Pasavant and I agreed to.

"His producing a fine carpet and valuing it so high was a great advantage to me, as it occasioned my fine carpets to be looked upon as cheap—no one being able to see such a difference in its goodness and beauty as there was in the price. In consequence of this I had during the ensuing year a demand for fine carpets as fast as I could make them.

"The Society then proposed their third and last premium for making carpets, to be produced in March, 1759, with this further restriction, 'That those who had already received premiums for making carpets should not be admitted as candidates unless they produced six carpets at least, of which every one should be judged superior in goodness in proportion to its price to any produced by any other person.'

"This stimulated me to try to my utmost ability, and accordingly, in March, 1759, I produced the six carpets, of which several were fine ones and of large sizes. The only competitor was Mr. Jesser, of France (Mr. Moore and Mr. Pasavant declining), who produced one carpet.

"When Mr. Jesser came to see my carpets he candidly acknowledged that he had no right to the first premium of £30, which was without any debate adjudged to me by the Society.

"These repeated successes so advanced the price of my carpets that I had a constant and almost uninterrupted demand for many years, which has continued with but little variation as to demand, and with no diminution as to reputation, to this day.

"These memoirs of the carpet manufactory I give to my son, Thomas Whitty, by him to be transmitted to his children.

"Signed, THO^S WHITTY.

"April 16th, 1790."

Axminster carpets continued to be made in that town until 1835, when the looms were removed to Wilton.

MARINE ALGÆ OF DEVON.

BY EDWARD PARFITT.

(Read at Tavistock, August, 1889.)

MARINE Algæ, so far as is known, were the earliest plants to occupy this globe; but in what form they first appeared there is no possibility of ascertaining. The probability is, that these were of a much more lowly type than those which have left their impress upon the rocks of our lowest sedimentary deposits. Thus, impressions of plants believed to be of the marine flora, and which have received the following names—*Chondrites acutangulus*, *Crusiana simplicata*, *Palæchorda major*, and *P. minor*—have been discovered in the Lower Silurian rocks of Wales; while in the Upper Silurians *Chondrites antiquus* has been found. As a rule, marine plants are more scarce than land plants, which seem to have followed them in the great scheme of Nature. The scarcity of fossil Algæ must be attributed to the structure of the plants; being composed almost entirely of cells, and having no woody fibre or hardened cells, they soon decay, and leave not a trace behind.

Around the shores of Patagonia and the Falkland Islands some of the sea-weeds grow to an enormous height and size; for instance, *Lessonia fuscescens* has a stem ten to twelve feet in height, and from two to three inches in diameter, forming quite a tree, with a head of fronds several feet in length. The *Macrocystes* has been seen to have fronds from 300 to 700 feet long. But for beauty of colouring and wonderful forms perhaps those growing on the shores of Australia stand pre-eminent.

For convenience of study and classification the Marine Algæ have been divided into sections thus: the Rhodomenæ, comprising all the red and red-brown species; the Melanospermeæ, all the olive coloured; and the Chlorospermeæ, all those of a grass-green colour; but it must be remembered that no sharp line of demarcation can be drawn in these divisions, as they merge more or less into each other. Some species belonging to the green series will be found of

a purple colour, and some of the red series assume a green tint under certain conditions, especially those of the *Chondrites*, *Rhodomenias*, and *Polyides*.

The Algæ of our shores cannot be compared with those of warmer climes and brighter sun for brilliancy of colouring, but for the British Isles the shores of Devon may be considered the richest. The rocky nature of our coast, with its numerous inlets, nooks, and bays, is most favourable for the production of these "flowers of the sea," no doubt owing to our peninsular position. The brilliancy of colour, the variety, and the graceful forms of the Algæ as seen floating in the rock-pools have attracted many admirers to their study in this county. The chief exponent of the Marine Algæ of Devon was Mrs. Griffiths, of Torquay, around whose honoured name may be grouped those of the following, who have also contributed largely to our knowledge of the various forms growing round these shores—Dr. Cocks, Rev. W. S. Hore, Mr. Boswarva, Miss Warren, Miss Gifford, Miss Cutler, Mrs. Gatty, Mrs. Gulson, Mrs. Wyatt, Rev. R. Creswell, &c.

The chemical composition of some of the Algæ is most complicated, thus the *Laminaria saccharina* contains no less than twenty-one ingredients. The constituents of these plants render them very valuable as manure, for which they are largely used in this county. According to Hansen,¹ the Fucaceæ contain chlorophyll and xanthophyll in the same proportion as plants of a higher organization. In *Fucus vesiculosus* they are the same as in flowering plants. The spectrum of chlorophyll presents four absorption bands in the red, and that of xanthophyll, three in the blue.

Sea-weeds are found useful for a variety of purposes in many parts of the world. Several species are used as food, medicines, and in the arts. In China and Japan *Plocaria tenax* is made into glue, and used to strengthen and give a gloss to paper for the manufacture of Chinese lanterns. Most of the Algæ furnish iodine to a greater or less extent, and this may always be known by their giving out a perfume resembling violets. "*Rytiphlea tinctoria* yields a red dyeing matter, the fucus of the ancients."² The only Flora which is at all comparable with that of Devonshire as regards the number of marine plants is J. T. Mackay's *Flora Hibernica*, in which he enumerates 229 species. The number of marine plants described by the authors of the *Flora Devoniensis* is 114, but the number of species now enumerated as native to our shores is 318.

¹ *Bot. Zetg.* (1884), p. 649.

² LINDLEY, *Veg. King.* p. 24, 1853.

CATALOGUE.

WITH NOTES AND OBSERVATIONS.

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SUB-CLASS I.—MELANOSPERMEÆ.

Order I.—FUCACEÆ.

GENUS, *HALIDRYX*, *Lyngbye*.*SILIKUOSA*, *Lyngb.*

Harv. Phy. Brit. pl. 66; Eng. Bot. t. 474.

Generally distributed round the coast between tide-marks, and from several fathoms deep.

GENUS, *CYSTOSEIRA*, *Agard.**ERICOIDES*, *Agard.*

Harv. Phy. Brit. pl. 265; Eng. Bot. t. 1968.

Torbay.—Mrs. Griffiths. Plymouth. Teignmouth, on the rocky shore beyond the Ness. Ilfracombe.—E. P. Salcombe, in deep water; very fine.—Mrs. Griffiths. A very variable plant.

GRANULATA, *Agard.*

Harv. Phy. Brit. pl. 60; Eng. Bot. t. 2169.

Shores of Devon; Torbay. Very fine specimens gathered by Mrs. Griffiths in both shallow and deep water, with air vessels and fruit; Ilfracombe.

BARBATA, *Agard.*

Harv. Phy. Brit. pl. 360; Eng. Bot. t. 2170.

Hudson says of this plant, in "*Devonia passim*;" and Stackhouse gives "*Devonshire, S.W. coast.*" It appears that Hudson is the only botanist who has ever seen a British specimen, and it is very doubtful if his plant really grew upon our shores, as no one else has met with it.

FÆNICULACEA, *Grev.*

Harv. Phy. Brit. pl. 122; Eng. Bot. t. 2130.

Torbay and Ladrum Bay, near Sidmouth.—Mrs. Griffiths. Very fine; with air vessels and fruit from the latter station. Ilfracombe.—*North Devon Guide.* Exmouth.—E. P.

Var. DISCORS, Stackhouse.

Stack. pl. 17. p. 108; Eng. Bot. t. 2131.

This fine variety was obtained by Mrs. Griffiths from deep pools at Sidmouth; it is very scarce, and regarded by some as a species, and by other collectors as a deep-water form only, and in this Mrs. Griffiths was inclined to agree.

FIBROSA, *Agard.*

Harv. Phy. Brit. pl. 133.

Common on our shores; it varies much with the depth of water in which it grows.

GENUS, *PYCNOPHYCUS, Kützting.*TUBERCULATUS, *Huds.*

Harv. Phy. Brit. pl. 89; Eng. Bot. t. 728.

This is a rare plant with us, but has been found at Ilfracombe by Bishop Goodenough.

GENUS, *FUCUS, Linnæus.*VESICULOSUS, *Linn.*

Harv. Phy. Brit. pl. 204; Eng. Bot. t. 1066.

Very common on all our shores, and a most variable plant. There are specimens in Mrs. Griffiths' collection from Lynmouth, with remarkably broad fronds, and with short narrow fronds in the estuary of the Exe, at Topsham.—E. P.

*CERANOIDES, Linn.**Harv. Phy. Brit. pl. 271 ; Eng. Bot. t. 2115.*

Specimens from the estuary of the Dart, with all the upper branches inflated ; a common species in our estuaries.

*SERRATUS, Linn.**Harv. Phy. Brit. pl. 47 ; Eng. Bot. t. 1221.*

A common species on all our shores between tide marks. There is in Mrs. Griffiths' collection a smooth variety with narrow fronds, and free from serratures. It was gathered in Torbay. Also a broad-leaved form from deep-water off Lynmouth. This comes very close to the variety *latifolia* (Greville) from the shores of But.

*NODOSUS, Linn.**Harv. Phy. Brit. pl. 158 ; Eng. Bot. t. 570.*

An abundant species, from half-tide level to deep-water ; everywhere.

*CANALICULATUS, Linn.**Harv. Phy. Brit. pl. 229.*

Also an abundant species on all our shores.

GENUS, *HIMANTHALIA, Lyngbye.**LOREA, Lyngb.**Harv. Phy. Brit. pl. 78 ; Grev. Alg. Brit. t. 3.*

Everywhere round the coast ; frequently thrown up on the beach in storms.

Order II.—SPOROCHNACEÆ
GENUS, *DESMARESTIA, Lamoureux.*

*LIGULATA, Lamour.**Harv. Phy. Brit. pl. 115 ; Grev. Alg. Brit. t. 5 ; Eng. Bot. t. 1636.*

Common in summer on all our coasts.

*ACULEATA, Lamour.**Harv. Phy. Brit. pl. 49 ; Stack. Ner. Brit. t. 8, p. 24.*

Torbay, Teignmouth, Salcombe, &c. ; Ilfracombe ; Exmouth.
—E. P.

*VIRIDIS, Lamour.**Harv. Phy. Brit. pl. 312 ; Eng. Bot. t. 1669.*

On stones and rocks ; also on seaweeds near low-watermark, Torbay.

GENUS, *ARTHROCLADIA*, *Duby.**VILLOSA*, *Duby.*

Harv. Phy. Brit. pl. 64; Eng. Bot. t. 546.

This beautiful plant is not common. There is in Mrs. Griffiths' collection a fine specimen, nearly two feet long, from Sidmouth, in fruit.

PEDUNCULATUS, *Agard.*

Harv. Phy. Brit. pl. 56; Eng. Bot. t. 545.

On rocks near low-watermark, Salcombe, Sidmouth; very fine specimens dredged off the Thatcher Rock.

Order III.—*LAMINARIACEÆ.*GENUS, *ALARIA*, *Greville.**ESCULENTA*, *Grev.*

Harv. Phy. Brit. pl. 79; Grev. Alg. Brit. t. 4.

Very generally distributed round our coasts. Large and fine at Trentishoe, North Devon.

DIGITATA, *Lam.*

Harv. Phy. Brit. pl. 223; Eng. Bot. t. 2274.

One of the most abundant of algæ on our shores. In the early spring the fresh growths begin to put forth from the old fronds, and it is very curious and instructive to observe the various forms they then assume. There is a nice series of plants, from an inch in height to full-grown specimens in various stages of development, in Mrs. Griffiths' collection.

BULBOSA, *Lamour.*

Harv. Phy. Brit. pl. 241; Eng. Bot. t. 1760.

This is also one of the most abundant species, and is cast up by the waves in great quantities in the autumn on the shore. There is a remarkable form in Mrs. Griffiths' collection with a very long stem, from which spring numerous long, narrow fronds.

SACCHARINA, *Lamour.*

Harv. Phy. Brit. pl. 289; Eng. Bot. t. 1376.

Common all round the coast.

PHYLLITIS, *Lamour.*

Harv. Phy. Brit. pl. 192; Eng. Bot. t. 1331.

Generally distributed round our shores; Sidmouth and Torbay very fine; not abundant.

*FASCIATA, Agard.**Harv. Phy. Brit. pl. 45; Eng. Bot. Supp. t. 2845.*

Salcombe Bay, Sidmouth. Torquay.—Mrs. Griffiths.

GENUS, *CHORDA, Lamoureux.**FILUM, Lamour.**Harv. Phy. Brit. pl. 107; Eng. Bot. t. 2487.*

This curious and common plant must be familiar to everyone who takes a walk along any of our beaches; its long lace-like form has obtained for it the well-known name of "sea-laces," or sea whip-lash.

Var. B. TOMENTOSA, Lyngb.

Ilfracombe.—Mrs. Griffiths. Between Rillage Point and Watermouth.

*LOMENTARIA, Lyngb.**Harv. Phy. Brit. pl. 285; Eng. Bot. Supp. t. 2902.*

Torbay and Sidmouth; very fine. Dawlish.—Mr. R. Gray.

Order IV.—*DICTYOTACEÆ.*GENUS, *CUTLERIA, Greville.**MULTIFIDA, Grev.**Harv. Phy. Brit. pl. 75; Eng. Bot. t. 1913.*

Fine specimens of this plant were dredged in Torbay, Salcombe, and Sidmouth by Miss Cutler and Mrs. Griffiths. Exmouth.—E. P. Plymouth.—Rev. W. S. Hore.

GENUS, *HALISKERIS, Greville.**POLYPODIOIDES, Agard.**Harv. Phy. Brit. pl. 19; Grev. Alg. Brit. t. 8.*

Very fine, and in fruit on the Thatcher Rock; a form with the spores scattered all over the frond, instead of forming a series on each side the midrib; and another with the spores collected into distinct sori or groups. Are met with at Ilfracombe.

GENUS, *PADINA, Adanson.**PAVONIA, Lamour.**Harv. Phy. Brit. pl. 91; Grev. Alg. Brit. t. 10.*

This beautiful plant is abundant in shallow pools between the tidal levels at Sidmouth, Exmouth Point, Shaldon, Torbay, &c.

GENUS, *ZONARIA*, Agard.

PARVULA, Grev.

Harv. Phy. Brit. pl. 341 ; Grev. Scot. Cryp. Fl. t. 360.

Miss Cutler, of Sidmouth, added this interesting lichen-like plant to the British Flora ; it was discovered on sandstone rocks between the tidal levels.

GENUS, *DICTYOTA*, Lamoureux.

ATOMARIA, Grev.

Harv. Phy. Brit. pl. 1 ; Eng. Bot. t. 419.

By no means a common plant ; but met with in Torbay and at Ilfracombe in the summer ; very fine.

DICHOTOMA, Lamour.

Harv. Phy. Brit. pl. 103 ; Eng. Bot. t. 774.

Generally distributed all round the coast ; a most variable plant.

Var. B. INTRICATA, Grev.

The fronds in this are cut into fine thread-like segments ; found at Sidmouth ; rather rare.

GENUS, *STILOPHORA*, J. Agard.

RHIZODES, J. Agard.

Harv. Phy. Brit. pl. 70 ; Eng. Bot. t. 1688.

Parasitic on *Cystoseria*.—Mrs. Wyatt, in *Alg. Danmoniensis*, No. 5.

GENUS, *DICTYOSIPHON*, Greville.

FENICULACEUS, Grev.

Harv. Phy. Brit. pl. 326 ; Eng. Bot. Supp. t. 2746.

Generally distributed round the coast ; mostly parasitic, or rather epiphytic, on other algæ.

GENUS, *STRIARIA*, Greville.

ATTENUATA, Grev.

Harv. Phy. Brit. pl. 25 ; Grev. Scot. Cryp. Flo. t. 288.

Devonport.—Rev. W. S. Hore. Torbay.—Mrs. Griffiths. Sidmouth.—Miss Cutler. Ilfracombe, between Rillage Point and Watermouth.—Mr. J. Ralfs. Salcombe ; very fine.

GENUS, *PUNCTARIA*, Greville.

LATIFOLIA, Grev.

Harv. Phy. Brit. pl. 8 ; Wyatt, Algæ Danmon. No. 9.

Generally distributed. Tor Abbey and Meadfoot Sands.—Mrs. Griffiths. Sidmouth.—Miss Cutler.

PLANTAGINEA, Grev.*Harv. Phy. Brit. pl. 128; Eng. Bot. t. 2136.*

Also generally distributed. Sidmouth and Torbay; Ilfracombe, very fine. Dawlish.—Mr. R. J. Gray.

GENUS, ASPEROCOCOUS, Griffiths.**COMPRESSUS, Griff.***Harv. Phy. Brit. pl. 72; Wyatt, Algæ Danmon. No. 8.*

This interesting plant was discovered by Mrs. Griffiths at Sidmouth in 1828, and afterwards was found in Torbay and Hele, Ilfracombe. Dawlish.—Mr. R. J. Gray.

TURNERI, Dillwyn.*Harv. Phy. Brit. pl. 11; Eng. Bot. t. 2570.*

This has been met with at Sidmouth and Salcombe; very fine.

ECHINATUS, Grev.*Harv. Phy. Brit. pl. 194; Wyatt, Algæ Danmon. No. 7.*

Generally distributed round our shores, but not common. Sidmouth.—E. P.

Var. B. VERMICULIS, Moore.

Fronde filiform; setaceous, sometimes twisted. Torbay.—Mrs. Griffiths.

GENUS, LITOSIPHON, Harvey.**PUSILLUS, Harv.***Phy. Brit. pl. 270; Wyatt, Algæ Danmon. No. 58.*

Parasitic on *Chorda filum*, and several other marine plants; on the coast; not common. Sidmouth.—E. P.

Order V.—CHORDARIACEÆ.**GENUS, CHORDARIA, Agard.****FLAGELLIFORMIS, Agard.***Harv. Phy. Brit. pl. 111; Eng. Bot. t. 1222.*

Meadfoot, Torquay, Brixham. Very fine.—Mrs. Griffiths. Exmouth.—E. P.

GENUS, MESOGLOIA, Agard.**VERMICULARIS, Agard.***Harv. Phy. Brit. pl. 31; Eng. Bot. t. 1818.*

Tor Abbey sands, Paignton.—Mrs. Griffiths.

GRIFFITHSIANA, *Grev.*

Harv. Phy. Brit. pl. 318; Wyatt, Algæ Danmon. No. 48.

Found between tide-marks, Meadfoot, by Mrs. Griffiths;
and at Sidmouth by Miss Cutler. Rather rare.

VIRESCENS, *Carm.*

Harv. Phy. Brit. pl. 82; Berk. Glea. t. 17, f. 2.

A very generally distributed species, but, nevertheless,
a very beautiful one. Torbay.—E.P.

GENUS, *LEATHESIA*, *S. F. Gray.*TUBERIFORMIS, *S. F. Gray.*

Harv. Phy. Brit. pl. 324; Eng. Bot. t. 1956.

On rocks and corallines, between tide-marks, round the
shores of Torbay. Sidmouth.

BERKELEYI, *Harvey.*

Harv. Phy. Brit. t. 176; Berk. Glea. t. 1, f. 2.

On rocks between tide-marks, Torquay.—Rev. M. J.
Berkeley, Tor Abbey rocks.—Mrs. Wyatt.

GENUS, *BALFSIA*, *Berkeley.*DEUSTA, *Berk.*

Harv. Phy. Brit. pl. 98; Eng. Bot. Supp. t. 2866.

On rocks between tide-marks all round our coasts.

GENUS, *ELACHISTEA*, *Fries.*FUCICOLA, *Fries.*

Harv. Phy. Brit. pl. 211; Dillw. Conf. t. 66.

Parasitic on *Fucus serratus*, *F. vesiculosus*. Common.

FLACCIDA, *Aresch.*

Harv. Phy. Brit. pl. 260; Dillw. Conf. t. G.

Common on *Cytoseira fibrosa* on various parts of the coast.

STELLULATA, *Griffiths.*

Harv. Phy. Brit. pl. 261.

This minute but beautiful plant is, so far as is known,
peculiar to the shores of Britain. It was discovered by
Mrs. Griffiths on old fronds of *Dictyota dichotoma* at
Torquay.

SCUTULATA, *Duby.*

Harv. Phy. Brit. pl. 323; Eng. Bot. t. 2311.

Parasitical on the thongs of *Himanthalia lorea*. Common
all round the coast in summer.

ATTENUATA, Harvey.

Phy. Brit. pl. 28.

Parasitical on *Cystoseira ericoides* at Elbery Cove, Torquay.
—Mrs. Griffiths.GENUS, **MYRIONEMA, Greville.****STRANGULANS, Grev.**

Harv. Phy. Brit. pl. 280. Grev. Cryp. Fl. t. 300.

Parasitical on *Ulva* and *Enteromorpha* in Torbay. Frequent.
In abundance at Sidmouth, July, 1887.—E. P. It stains
the paper dull purple.**LECLANCHERII, Harvey.**

Phy. Brit. pl. 41, A.

On decaying fronds of *Rhodymenia palmata* in autumn.
Torbay.—Mrs. Griffiths. On *Ulva lactuca* at Exmouth.
This plant is nearly like, in its mode of growth (but
destitute of the spinous processes), the *Coleochaete*, one
of the fresh-water algæ.**PUNCTIFORME, Harvey.**

Phy. Brit. pl. 41, B; Hooker Brit. Fl. p. 391.

Parasitical on *Ceramium rubrum*. Torquay.—Mrs. Griffiths.

Order VI.—ECTOCARPACEÆ.

GENUS, **GLADOSTEPHUS, Agard.****VERTICILLATUS, Agard.**

Harv. Phy. Brit. pl. 33; Eng. Bot. t. 1718.

A very common plant all round our shores.

SPONGIOSUS, Agard.

Harv. Phy. Brit. pl. 138; Dillw. pl. 43; Eng. Bot. t. 2429.

This is also a common species on rocks and stones between
tide-marks. Dawlish, &c.GENUS, **SPHACELARIA, Lyngbye.****FILICINA, Agard.**

Harv. Phy. Brit. pl. 142; Grev. Scot. Cryp. Fl. t. 348.

A generally but sparsely-distributed plant. Hele, near the
ladies' bathing-place. Ilfracombe.—Mrs. Griffiths. Sal-
combe.—Mrs. Wyatt. Plymouth.—Mr. Sconce.**SERTULARIA, Bonnem.**

Harv. Phy. Brit. pl. 143.

Parasitical on various algæ, in rather deep water. Torbay.
—Mrs. Griffiths. It is very doubtful if this be anything
more than a deep-water form of *S. filicina*.

SCOPARIA, *Lyngb.*

Harv. Phy. Brit. pl. 37 ; Dillw. Conf. t. 52.

One of the most abundant species between tide-marks.
A very variable plant as regards its growth.

PLUMOSA, *Lyngb.*

Harv. Phy. Brit. pl. 87 ; Eng. Bot. t. 2330 (left-hand figure).

This does not appear to be a common plant with us.
Found at Smallmouth, Ilfracombe, by Mr. Ralfe. It is, however, generally but sparsely distributed round the British shores.

CIRRHOSA, *Agard.*

Harv. Phy. Brit. pl. 178 ; Dillw. Conf. t. 86.

Very fine from Ladrum Bay. Parasitical on several plants, Torbay.—Mrs. Wyatt. Generally distributed. Dawlish. Fine.—E. P.

FUSCA, *Agard.*

Harv. Phy. Brit. pl. 149 ; Dillw. Conf. t. 95.

This curious and interesting plant was met with by Mrs. Griffiths at Sidmouth, but is very rare.

RADICANS, *Harvey.*

Phy. Brit. pl. 189 ; Eng. Bot. t. 2138.

An uncommon species. On the rocks at Torbay and Ilfracombe, between Rillage Point and Watermouth.

GENUS, *ECTOCARPUS, Lyngbye.***SILICULOSUS, *Lyngb.***

Harv. Phy. Brit. pl. 162 ; Eng. Bot. t. 2319.

Parasitical on various algæ between tide-marks, Torbay, Sidmouth.—E. P. On rocks, Plymouth.—Mr. Boswarva.

FENESTRATUS, *Berk.*

Harv. Phy. Brit. pl. 257.

The only locality known for this interesting species was Salcombe, where it was gathered by Mrs. Wyatt. It has, however, been discovered on rocks at the Hoe, Plymouth, by Mr. Boswarva.

FASCICULATUS, *Harvey.*

Phy. Brit. pl. 273 ; Wyatt, Algæ Danmon. No. 302.

Parasitical on *Laminaria digitata* mostly, but found on other algæ, between tide-marks.

HINKSLÆ, Harvey.

Phy. Brit. pl. 22.

This very distinct species is parasitical on *Laminaria bulbosa*, the stems of which are sometimes clothed with it. Torbay.—Mrs. Griffiths. Plymouth.—Mr. Boswarva.

TOMENTOSUS, Lyngb.

Harv. Phy. Brit. pl. 182; Dillw. Conf. t. 56.

Parasitic on *Fucus vesiculosus* and *Himanthalia lorea*, Torbay.—Mrs. Griffiths, Mrs. Wyatt. Plymouth. Ilfracombe.

HOLMESII, Batters.

Journal Linn. Soc. v. 24, p. 450, pl. viii. figs. 7-16.

This minute species was discovered by Mr. E. M. Holmes on shady ledges of rock at high water-mark at Torquay. It has also been found growing on woodwork at Minehead. The plant does not appear to reach more than a quarter of an inch in height, and "covers the rocks for a considerable distance with a soft brown turf."

CRINITUS, Carm.

Harv. Phy. Brit. pl. 330.

On stones on muddy shores. Watermouth, North Devon.—Mrs. Griffiths. Plymouth.—Mr. Boswarva.

PUSILLUS, Griff.

Harv. Phy. Brit. pl. 153; Eng. Bot. Supp. t. 2872.

Parasitical on the smaller algæ. Ilfracombe.—Mr. Ralfs. Torbay.—Mrs. Griffiths. Firestone Bay.—Mr. Boswarva.

DISTORTUS, Carm.

Harv. Phy. Brit. pl. 329.

This very distinct and beautiful little plant is extremely rare on our coast. One specimen only, so far as I am aware, has been discovered, and that was met with by Mrs. Griffiths. Parasitic on *Zostera marina* in Torbay.

LANDSBURGHII, Harvey.

Phy. Brit. pl. 233.

Parasitic. Sidmouth, July, 1887. I do not feel quite certain that I am right in assigning the plant I have to this species; still, it agrees better with this than any other, both in its mode of growth, and in its fructification.—E. P.

LITTORALIS, *Lyngb.**Harv.* Phy. Brit. pl. 197; *Dillw.* Conf. t. 31.

A common plant on *Fucus serratus* and other littoral plants all round our coasts.

LONGIFRUCTUS, *Harv.**Phy. Brit.* pl. 258.

On rocks, Plymouth Hoe. Annual.—Mr. Boswarva.

GRANULOSUS, *Agard.**Harv.* Phy. Brit. pl. 200; *Eng. Bot.* t. 2351.

Parasitic on various algæ, also on rocks, between tide-marks. Torbay.—Mrs. Griffiths and Mrs. Wyatt. Plymouth. Ilfracombe.—*Guide.*

SPHÆROPHORUS, *Carm.**Harv.* Phy. Brit. pl. 126; *Wyatt*, Algæ Danmon. No. 173.

Parasitical on the smaller algæ between tide-marks, Sidmouth. Torquay.—Mrs. Griffiths. Mewstone, Bovisand.—Mr. J. Boswarva. On *Ptilota plumosa*, Wildersmouth, North Devon.

BRACHIATUS, *Harv.**Phy. Brit.* pl. 4; *Eng. Bot.* t. 2571.

On *Rhodomenia palmata*, Torbay.—Mrs. Griffiths. Firestone Bay.—Mr. Boswarva. Margin of ladies' bathing cove, Ilfracombe.

MERTENSII, *Agard.**Harv.* Phy. Brit. pl. 132; *Dillw.* Conf. Supp. p. 79.

This very distinct plant is stated by Mrs. Wyatt in *Algæ Danmoniensis* to be extremely rare, but since this was written it has been found in several places along our coast in considerable plenty; thus, in Salcombe Bay (very fine), Ilfracombe, Plymouth, Torbay, &c. The finest specimens are obtained in quiet waters.

GENUS, **MYRIOTRICHIA**, *Harvey.***CLAVIFORMIS**, *Harvey.**Phy. Brit.* pl. 101; *Wyatt*, Algæ Danmon. No. 131.

Parasitical on *Chorda lomentaria*, Torbay.—Mrs. Griffiths. Plymouth.—Mr. Boswarva.

FILIFORMIS, *Harvey.**Phy. Brit.* pl. 156; *Wyatt*, Algæ Danmon. No. 213.

Also parasitical on the above plant, Torbay.—Mrs. Wyatt. Plymouth.—Mr. Boswarva.

*Sub-Class II.—RHODOSPERMEÆ.**Order, RHODOMELACEÆ.**GENUS, RHODOMELA, Agard.**SUBFUSCA, Agard.**Harv. Phy. Brit. pl. 264; Eng. Bot. t. 1164.*

A generally distributed plant on rocks and on algæ all round our coasts.

*GENUS, HELICOTHAMNION, Kütz.**SCORPIOIDES, Kütz.**Harv. Phy. Brit. pl. 48; Eng. Bot. t. 1428.*

On muddy shores, mouth of the Dart and Salcombe.—Mrs. Griffiths. In hollows of sea walls. Trevol, Pomphlete.—Mr. Boswarva.

*GENUS, EYTIPHLEA, Agard.**PINASTROIDES, Agard.**Harv. Phy. Brit. pl. 85; Eng. Bot. t. 1042.*

On rocks at low water-mark, Whitsand Bay.—Mr. Boswarva. Torbay and Sidmouth.

*COMPLANATA, Agard.**Harv. Phy. Brit. pl. 170; Turner, Hist. t. 23, f. h.*

On rocks in shallow water. Whitsand Bay.—Dr. Jacob. Dredged in Plymouth Sound.—Rev. W. S. Hore. Bovisand.—Mr. Boswarva. This must be regarded as a rare species on our coast.

*THUYOIDES, Harvey.**Phy. Brit. pl. 221; Eng. Bot. Supp. t. 2882.*

A generally distributed species in rock pools between tide-marks. Ilfracombe.—Mr. Ralls. Torbay.—Mrs. Griffiths. Plymouth.—Mr. Boswarva.

*FRUTICULOSA, Harvey.**Phy. Brit. pl. 220; Eng. Bot. t. 1686.*

On rocky pools between tide-marks. Mount Batten, Plymouth.—Mr. Boswarva. Tor Abbey rocks, common.—Mrs. Wyatt.

*GENUS, POLYSIPHONIA, Greville.**URCEOLATA, Grev.**Harv. Phy. Brit. pl. 167; Eng. Bot. t. 2365.*

A very abundant species all round the coast, on rocks and on stems of *Laminaria digitata*. Exmouth.—E. P.

FORMOSA, Suhr.

Harv. Phy. Brit. pl. 168; Wyatt. Alg. Danmon. No. 216.

In tide pools on rocks. Torpoint.—Mr. Boswarva. Mouth of the Dart.—Mrs. Griffiths. Sidmouth.—Rev. R. Creswell, &c.

OBSCURA, J. Agard.

Harv. Phy. Brit. pl. 102, A.

This is a rare species. The only locality recorded for it is on the sheltered side of a lofty rock near Sidmouth.—Rev. R. Creswell.

PULVINATA, Spreng.

Harv. Phy. Brit. pl. 102, B; Wyatt, Alg. Danmon. No. 215.

Sparingly distributed in rock pools round the coast.

FIBRATA, Harvey.

Phy. Brit. pl. 208; Dillw. Con. Synop. t. G. p. 84.

In tide pools. Mount Batten.—Mr. Boswarva. Torbay; rare.—Mrs. Griffiths. E. P.

GRIFFITHSIANA, Harvey.

Phy. Brit. pl. 228; Harv. Man. p. 91.

This beautiful and very rare plant was discovered by Mrs. Griffiths at Torquay, 1837; and, curious to relate, it has not been seen since.

ELONGELLA, Harvey.

Phy. Brit. pl. 146; Wyatt, Alg. Danmon. No. 84.

A generally distributed species. It varies very much between the winter and summer states, so much so that it might be mistaken for distinct species. This species was also discovered by that indefatigable lady, Mrs. Griffiths.

ELONGATA, Grev.

Harv. Phy. Brit. pl. 292, pl. 293; Eng. Bot. t. 2429.

On tide pools. Mount Batten, Torpoint, Torbay, Dawlish.—E. P. Widely distributed.

VIOLACEA, Grev.

Harv. Phy. Brit. pl. 209; Wyatt, Alg. Danmon. No. 176.

Salcombe, bearing capsules in May. Torbay.—Mrs. Griffiths. Mount Edgumbe, Bovisand.—Mr. Boswarva. It is not a common species.

FIBRILLOSA, Grev.

Harv. Phy. Brit. pl. 302; Wyatt, Alg. Danmon. No. 136.

Parasitical on algæ, also on rocks between tide-marks. Mount Batten, Whitsand Bay.—Mr. Boswarva. Sidmouth, Torbay, with capsules.—Mrs. Griffiths. Meadfoot.—Mrs. Wyatt. Rather rare.

BRODLÆI, Dillw.

Harv. Phy. Brit. pl. 195; Dillw. Conf. t. 109; Eng. Bot. 2589.

This fine species was met with in tide pools at Torpoint by Mr. Boswarva. Salcombe and Torbay; very fine, with capsular fruit in September.—Mrs. Griffiths.

VARIEGATA, J. Agard.

Harv. Phy. Brit. pl. 155.

Beggar's Island, and Torpoint, on mud-covered rocks.—Rev. W. S. Hore and Dr. Cocks. Plymouth. A local and uncommon species.

SIMULANS, Harv.

Harv. Phy. Brit. pl. 278; Manual, ed. 1, p. 87.

This beautiful and rare species was discovered by Mrs. Griffiths in the Bathing Cove, Torquay; and subsequently found at Bovisand by Rev. W. S. Hore.

NIGRESCENS, Huds.

Harv. Phy. Brit. pl. 277; Eng. Bot. t. 1743.

A generally distributed plant, on rocks at Landridge, Torbay, Ladrum Bay, Ilfracombe. Common at half-tide level, Plymouth.

AFFINIS, Moore.

Harv. Phy. Brit. pl. 303; Manual, ed. 2, p. 90.

There is a specimen with capsules in Mrs. Griffiths' collection marked Tor Abbey.

SUBULIFERA, Agard.

Harv. Phy. Brit. pl. 227; Wyatt, Alg. Danmon. No. 178.

Dredged on Nullipore banks in four or five fathoms of water. Torbay.—Mrs. Griffiths. Very rare.

ATRO-RUBESCENS, Grev.

Harv. Phy. Brit. pl. 172; Eng. Bot. t. 2340.

This plant fruits in April; generally distributed round our coast. Very fine in Salcombe Bay and Torbay.

FURCELLATA, Harvey.*Harv. Phy. Brit. pl. 7 ; Manual p. 90.*

A rare species, dredged in Torbay.—Mrs. Griffiths. Sidmouth.—Miss Cutler.

FASTIGIATA, Grev.*Harv. Phy. Brit. pl. 299 ; Eng. Bot. t. 1764.*

Meadfoot, Torbay.—Mrs. Griffiths. Budleigh Salterton. Common on *Fucus nodosus* ; generally distributed.

PARASITICA, Grev.*Harv. Phy. Brit. pl. 147 ; Eng. Bot. t. 1429.*

A generally but sparsely distributed species, and very beautiful. It has a particular attachment for the thin spreading *Melobesia*, which spreads over the rocks ; of a purplish colour.

BYSSOIDES, Grev.*Harv. Phy. Brit. pl. 294 ; Eng. Bot. t. 547.*

Gathered in fine fruit in July at Sidmouth and Torbay by Mrs. Griffiths. On rocks and stones near low-water-mark. Plymouth.—Mr. Boswarva.

GENUS, DASYA, Agard.**COCCINEA, Agard.***Harv. Phy. Brit. pl. 253 ; Eng. Bot. t. 1055.*

This plant is one of the gems among marine algæ inhabiting our shores, both for beauty of form and brilliancy of colouring. It is generally distributed, and ranges from low-water to several fathoms.

OCELLATA, Harvey.*Phy. Brit. pl. 40 ; Wyatt, Alg. Danmon. No. 179.*

This curious plant was found in abundance on the Pier at Torquay by Mrs. Griffiths ; also at Torpoint and Beggar's Island by Mr. Boswarva.

ARBUSCULA, Agard.*Harv. Phy. Brit. pl. 224 ; Harv. Man. p. 98.*

On rocks at low-watermark. On the Mewstone, Plymouth.—Rev. W. S. Hore. Salcombe.—Mr. Ralph. It is a rare species.

*Order VIII.—LAURENCIACEÆ.*GENUS, *BONNEMAISONIA*, *Agard.**ASPARAGOIDES*, *Agard.**Harv. Phy. Brit. pl. 51; Eng. Bot. t. 571.*

This elegant plant is found washed ashore in Plymouth Sound. Torpoint.—Rev. W. S. Hore. Torbay.—Mrs. Griffiths. It is generally and sparsely distributed around all our coasts.

GENUS, *LAURENCIA*, *Lamoureux.**PENNATIFIDA*, *Lamour.**Harv. Phy. Brit. pl. 55; Eng. Bot. t. 1202.*

An abundant plant all round our coasts; a most variable species. Specimens in Mrs. Griffiths' collection from deep-water have much broader fronds than those from near shore.

CÆSPITOSA, *Lamour.**Harv. Phy. Brit. pl. 236; Wyatt, Alg. Danmon. No. 162.*

On stones and shells with tide-marks, Wembury Bay.—Mr. Boswarva. More or less frequent all round the coast. Exmouth.—Mr. R. J. Gray.

OBTUSA, *Lamour.**Harv. Phy. Brit. pl. 148; Eng. Bot. t. 1201.*

Parasitical on the larger algæ, Torbay, with capsules. Very Rare.—Mrs. Griffiths. On corallines, Tor Abbey.—Mrs. Wyatt in *Algæ Danmoniensis*, No. 21.

DASYPHYLLA, *Grev.**Harv. Phy. Brit. pl. 152; Eng. Bot. t. 847.*

Sidmouth, Torbay, between tide-marks. Bovisand, Mount Edgcumbe.—Mr. Boswarva. Exmouth.—E. P. This is by no means a common species, but is scattered all round the coast.

Var. B., in Plymouth Sound.—Rev. W. S. Hore.

TENUISSIMA, *Grev.**Harv. Phy. Brit. pl. 198; Eng. Bot. t. 1832.*

A rare species. Torbay. Very fine, with capsular fruit in May.—Mrs. Griffiths. Bovisand.—Mr. Boswarva. Harbrick Rocks, Torquay; very rare.—Mrs. Wyatt. *Algæ Danmoniensis*, No. 22.

GENUS, *CHRYSYMENIA*, *J. Agard.*CLAVELLOSA, *J. Agard.**Harv. Phy. Brit. pl. 114; Eng. Bot. t. 1203.*

Abundant in pools and in deep water, Plymouth.—Mr. Boswarva. Torbay, Salcombe, Sidmouth, Exmouth.—Mr. R. J. Gray.

ROSEA, *Harvey.**Phy. Brit. pl. 358, A.*

In pools and on sides of rocks, Mount Edgcumbe, Firestone Bay. January to June.—Mr. Boswarva.

GENUS, *CHYLOCLADIA*, *Greville.*KALIFORMIS, *Grev.**Harv. Phy. Brit. pl. 145; Eng. Bot. t. 640.*

On rocks and dredged from deep water. Frequent round the coast. Torbay and Sidmouth. Very fine in fruit.—Mrs. Griffiths.

Var. Y. SQUARROSA, Kütz.

Forming densely-matted tufts, closely whorled, with more numerous branches and ramuli to each whorl, the latter patent or curved backwards. Found in Torbay.

OVALIS, *Hooker.**Harv. Phy. Brit. pl. 118; Eng. Bot. t. 711.*

Parasitical on algæ and on rocks in deep water, Torbay. Fine, with capsular fruit. Firestone Bay, Mount Edgcumbe.—Mr. Boswarva.

REFLEXA, *Lenorm.**Harv. Phy. Brit. pl. 42.*

This rare plant was found at Hagington, near Ilfracombe, by Miss Amelia Griffiths, July, 1834.

PARVULA, *Hooker.**Harv. Phy. Brit. pl. 210; Wyatt, Alg. Damnon. No. 72.*

Parasitic on smaller algæ in tide pools, near low-water-mark, Firestone Bay.—Mr. Boswarva. Sidmouth and Torbay (in fine fruit).—Mrs. Griffiths. Coasts of Devon (rather rare).—Mrs. Wyatt in *Algæ Danmon.* Budleigh Salterton.—Mr. R. J. Gray.

ARTICULATA, *Grev.**Harv. Phy. Brit. pl. 283; Eng. Bot. t. 1574.*

In pools, attached to rocks or on algæ, between tide-marks, Salcombe and Torbay. A generally distributed species.

Order IX.—CORALLINACEÆ.

GENUS, *CORALLINA*, *Linnaeus*.OFFICINALIS, *Linn.**Harv. Phy. Brit. pl. 222 ; Lamour. Corall. p. 127.*

Extremely abundant on all our shores, ranging from extreme high-water to some depth. A most variable plant as regards its height and form of development.

SQUAMATA, *Parkin.**Harv. Phy. Brit. pl. 201 ; Lamour. Corall. p. 129.*

Also abundant on all our coasts, near low-watermark.

GENUS, *JANIA*, *Lamoureux.*RUBENS, *Lamour.**Harv. Phy. Brit. pl. 252 ; Ellis, Corall. pl. 24, f. E.*

Parasitical on some of the smaller algæ all round our coast. Common.

CORNICULATA, *Lamour.**Harv. Phy. Brit. pl. 234 ; Ellis, Corall. pl. 24, f. G.*

A generally distributed plant on the smaller algæ in tide pools.

GENUS, *MELOBESIA*, *Linnaeus.*POLYMORPHA, *Linn.**Harv. Phy. Brit. pl. 345 ; Ellis, Corall. p. 27, f. D, d.*

Abundant all round the coast, coating the rocks between tide-marks with an irregular crustaceous covering.

CALCAREA, *Ellis and Solander.**Harv. Phy. Brit. pl. 291 ; Ellis and Solan. pl. 23, f. 13.*

Dredged in abundance on some rocky ground about ten miles off Budleigh Salterton. Herrings deposit their spawn on these banks in great abundance.—E. P.

LICHENOIDES, *Borlase.**Nat. Hist. Cornw. pl. 24, figs. 2, 3, 5 ; Ellis and Solan. pl. 23, f. 10-12.*

On the rocky shore beyond Shaldon, but scarce.

MEMBRANACEA, *Lamour.**Harv. Phy. Brit. pl. 347, A ; Lamour. Corall. pl. 12, f. 2, 3.*

Common on the fronds of various algæ, and on the leaves of *Zostera marina*, all round the coast.

FARINOSA, *Lamour.**Harv. Phy. Brit. pl. 347* ; B, *Lamour. Corall. pl. 12 f. 3, bad.*

On the fronds of *Phyllophora rubens*, forming white calcareous mealy patches.

PUSTULATA, *Lamour.**Harv. Phy. Brit. pl. 347* ; D, *Lamour. Corall. pl. 12, f. 2, A, B.*

On *Phyllophora rubens*, Teignmouth, Sidmouth, Plymouth.

VERRUCATA, *Lamour.**Harv. Phy. Brit. pl. 347* ; C, *Lamour. Corall. p. 142.*

On stems and fronds of the larger algæ. Generally distributed.

GENUS, **HILDENBRANDTIA**, *Nardo.***RUBRA**, *Meneg.**Harv. Phy. Brit. pl. 250* ; *Berk. Gl. t. 1, f. 3.*

On smooth stones between tide-marks, also in deep water, Plymouth.—Mr. Boswarva. Generally distributed round our shores. Plentiful at Sidmouth on stones on the rocks.—E. P.

Order X.—**DELESSERIACEÆ.**GENUS, **DELESSERIA**, *Lamoureux.***SANGUINEA**, *Lamour.**Harv. Phy. Brit. pl. 151* ; *Eng. Bot. t. 1041.*

This is one of the gems of the ocean, and is generally distributed round the British coast.

SINUOSA, *Lamour.**Harv. Phy. Brit. pl. 259* ; *Eng. Bot. t. 822.*

Parasitical on the larger algæ, and generally distributed round our shores, Lynmouth; very fine.—Mrs. Griffiths. Exmouth Warren.—E. P.

ALATA, *Lamour.**Harv. Phy. Brit. pl. 247* ; *Eng. Bot. t. 1337.*

Widely distributed, bearing capsules in December. A variable species as regards the development of the fronds.

ANGUSTISSIMA, *Agard.**Harv. Phy. Brit. pl. 83* ; *Turner, Fuci t. 160, f. k-l.*

Parasitical on the stems of larger algæ. Ilfracombe.—Mrs. Griffiths.

HYPOGLOSSUM, Agard.*Harv. Phy. Brit. pl. 2; Eng. Bot. t. 1396.*

Parasitical on the larger algæ, as well as on rocks between tide marks and in deep water. Generally distributed.

RUSCIFOLIA, Lamour.*Harv. Phy. Brit. pl. 26; Eng. Bot. t. 1395.*

This produces capsules in July; is parasitic on the larger algæ, and generally distributed.

GENUS, NITOPHYLLUM, Greville.**PUNCTATUM, Grev.***Harv. Phy. Brit. pl. 202; Eng. Bot. t. 1575.*

In deep water, near Mount Edgcumbe and Firestone Bay.
—Mr. Boswarva. Plymouth.—Rev. W. S. Hore. Very fine.

Var. B. OCELLATUM, Harvey.

Elbury Cove, Torbay.—Mrs. Griffiths. Ilfracombe.—*Guide*.
Budleigh Salterton.

HILLIÆ, Grev.*Harv. Phy. Brit. pl. 169; Grev. Cryp. t. 351.*

In deep water, Mount Edgcumbe. Mount Batten.—Mr. Boswarva. Plymouth.—Miss Hill. On the Pier, Torquay (very fine).—Mrs. Griffiths. Sidmouth.—E. P. Fruit in September. Ilfracombe.—*Guide*.

LITTERATUM, J. Agard.

The fructification in this species assumes the form of minute hieroglyphics, not punctiform, as in *Hilliæ* and other species; hence the name. This was discovered in Torbay by Mrs. Griffiths. See note on this species in *Grevillæ*, vol. i. p. 112.

BONNEMAISONI, Grev.*Harv. Phy. Brit. pl. 23; Grev. Scot. Cryp. Fl. t. 322.*

Parasitic on the stems of the large *Laminaria*. Budleigh Salterton, Plymouth, and generally distributed. Hele, Ilfracombe.

GEMELINI, Grev.*Harv. Phy. Brit. pl. 235; Eng. Bot. Sup. 2779.*

On rocks and the larger algæ. Plymouth. Very abundant, and fine. Antony Passage, Mount Edgcumbe, Sidmouth, Torbay.—Mrs. Griffiths. Ilfracombe.—*Guide*.

THYSANORHIZANS, Holmes.*Grev.* v. ii. pl. xii. p. 2.

Apparently a distinct species. Thrown up on a mud bank at Torpoint, and at Mount Edgecumbe, Plymouth. Mr. Holmes says this plant is thrown up at the above places, in some abundance, in July.

LACERATUM, Grev.*Harv. Phy. Brit.* pl. 267; *Eng. Bot.* 1067.

On rocks and the larger algæ, from low-watermark to many fathoms deep. Very generally distributed, and a most variable plant. It is necessary to have a long series to connect the various forms.

VERSICOLOR, Harvey.*Harv. Phy. Brit.* pl. 9; *Harv. Man.* p. 59.

An exceedingly rare plant, discovered by Miss Hill at Ilfracombe in the year 1800. Bovisand, Plymouth.—Mr. Boswarva.

GENUS, PLOCANIUM, Lamoureux.**COCCINEUM, Lyngb.***Harv. Phy. Brit.* pl. 44; *Eng. Bot.* t. 1242.

Parasitical on larger algæ, also on rocks. Very generally distributed.

Family, SPHÆROCOCOIDEÆ.**GENUS, STENOGRAMME, Harvey.****INTERRUPTA, Mont.***Harv. Phy. Brit.* pl. 157.

Mr. Boswarva says of this very rare plant: "Dredged in summer, and washed on shore at different seasons of the year. Plymouth Sound." And in a note he says further, "This very interesting plant, by far the most important addition lately made to the British Marine Flora, was discovered on the 21st October, 1846, by Dr. John Cocks, of Plymouth."

Order XI., RHODYMENIACEÆ.**BIFIDA, Grev.****GENUS, RHODYMENIA, Greville.***Harv. Phy. Brit.* pl. 32; *Eng. Bot.* p. 773.

On the sides of rocks in rather deep water. Torbay.—Mrs. Wyatt. In *Algæ Danmoniensis*, No. 66. Two varieties. A most variable plant. Sidmouth.—Mrs. Griffiths. There are ten varieties or forms in Mrs. Griffiths' collection, one very remarkable for the narrowness of the fronds and segments. This was found in Torbay. Ilfracombe.—*Guide*.

Var. B. CILIATA, *Turner* (*Crenulata* in Griffiths' collection).

Harv. Phy. Brit. pl. 32, f. 3.

Torbay.

LACINIATA, *Grev.*

Harv. Phy. Brit. pl. 121; Eng. Bot. t. 1068.

On rocks beyond the tide-mark, also parasitic on the larger algæ. Generally distributed round our shores.

PALMETTA, *Grev.*

Harv. Phy. Brit. pl. 134; Eng. Bot. t. 1120.

A variable plant. Parasitic mostly on the stems of *Laminaria digitata*. Widely distributed round our coast, Ilfracombe, &c.

Var. B. NICÆNSIS, *J. Agard.*

The disciform root of this variety sends out numerous long surculi, from whose sides spring narrow forked fronds. See fig. 3, p. 134, Harvey's *Phycologia Britannica*. Sidmouth.—Mrs. Griffiths and Miss Cutler.

CILIATA, *Linn.*

Harv. Phy. Brit. pl. 127; Eng. Bot. t. 1069.

A generally-distributed plant, but none the less beautiful. There are some fine specimens in capsular fruit, from Torbay, in Mrs. Griffiths' collection. Ilfracombe.—*Guide*. Dawlish.—E. P.

JUBATA, *Good.*

Harv. Phy. Brit. pl. 175; Linn. Trans. Socy. v. iii. t. 17, p. 162.

A variable species. Torbay, Salcombe, Ladrum Bay. Very fine. Ilfracombe.—*Guide*. Tubercles very rare; gathered at Budleigh Salterton. There is a remarkable form in Mrs. Griffiths' collection, with long, slender fronds, cut up into thread-like filaments, which are variably divided, forked, and divaricate.

PALMATA, *Linn.*

Eng. Bot. t. 1306, fig. on the right; Harv. Phy. Brit. pl. 217, f. 1.

Var. B. MARGINIFERA, *Harvey.*

Eng. Bot. 1306, fig. on left.

An abundant plant all round our shores, and exceedingly variable.

*Var. C. SOBOLIFERUS, Flor. Dan.**Harv. Phy. Brit. pl. 218, f. 2.*

This form was collected by Mrs. Griffiths in Elbury Cove, Torquay, and sent to Mr. D. Turner. The plant enters largely into the food of the poorer classes residing on the sea-coast, both in Scotland and Ireland, mixed with potatoes, to which it gives a sort of relish.

GENUS, *SPHEROCOCOCUS, Stackhouse.*CORONOPHOLIUS, *Agard.**Harv. Phy. Brit. pl. 61; Eng. Bot. t. 1478.*

In deep water, Plymouth Sound, Torbay; rare.—Mrs. Wyatt. (*Algæ Danmon.*, No. 122.)

GENUS, *GRACILARIA, Greville.*MULTIPARTITA, *J. Agard.**Harv. Phy. Brit. pl. 15; Turner, Fuci, t. 147.*

This was considered an extremely rare plant until the Rev. W. S. Hore discovered a habitat for it in the Sound at Plymouth, where it grows abundantly. It has also been dredged in Salcombe Bay by Mrs. Wyatt. There are some fine specimens in Mrs. Griffiths' collection.

COMPRESSA, *Agard.**Harv. Phy. Brit. pl. 205; Grev. Cryp. Fl. t. 341.*

This plant was discovered at Sidmouth, July, 1813, by Mrs. Griffiths and Miss Cutler. It produces its fruit in September. It is still a rare plant. Dawlish.—E. P.

CONFEROIDES, *Linn.**Harv. Phy. Brit. pl. 65; Eng. Bot. t. 1668.*

A generally-distributed plant, but not common. Exmouth and Sidmouth.—E. P. Torquay.—Mr. R. J. Gray.

ERECTA, *Grev.**Harv. Phy. Brit. pl. 177; Grev. Alg. Brit. t. 14.*

Torbay, with capsules, in March.—Mrs. Griffiths, Sidmouth. Torpoint.—Mr. Boswarva. This rare plant was added to the British Flora by that admirable and amiable lady Mrs. Griffiths.

GENUS, *HYPNÆA, Lamoureux.*PURPURASCENS, *Huds.**Harv. Phy. Brit. pl. 116; Eng. Bot. 1243.*

This delicate and graceful plant is widely distributed and plentiful between tide-marks. Sidmouth and Torbay, in fine capsular fruit. Dawlish and Exmouth.—E. P. The plant is subject to considerable variation.

Order XII.—CRYPTONEMIACEÆ.

Sub-Order I.—COCCOCARPEÆ.

GENUS, *GRATELOUPIA*, *Agard.**FILICINA*, *Agard.*

Harv. Phy. Brit. pl. 100; Turner, Fuci, t. 150, green form.

On rocks between tide-marks, Sidmouth and Ilfracombe.—Miss Cutler. Barrowcane Bay.—Mrs. Griffiths. Whitsand Bay and Mount Batten.—Mr. Boswarva. Torbay; rare. This plant was added to the British Flora by Miss Cutler.

GENUS, *GELIDIUM*, *Lamoureux.**CORNEUM*, *Lamour.*

Harv. Phy. Brit. pl. 53; Eng. Bot. f. 1970.

This is one of the most remarkable plants found on our shores, for the numerous forms it assumes. The variations are innumerable, and without the intermediate links some of them might, from external appearance, be easily raised into distinct species. The following are the more distinct forms:

 β *SESQUIPEDALE*, *Clemente.*

Turner, Fuci, pl. 257.

Torquay.—Mrs. Griffiths.

 γ *PINNATUS*, *Huds.*

Harv. Phy. Brit. t. 53, f. 1.

Ilfracombe, Torquay, Dawlish, &c.

 κ *ABNORME*, *Turner.*

Fuci, t. 257, f. r.

Torquay and Ilfracombe.

 λ *PULCHELLUM*, *Turner.*

Harv. Phy. Brit. pl. 53, f. 4.

Torbay.—Mrs. Griffiths.

 $\omicron$ *CRINALE*, *Turner.*

Fuci, t. 198.

Torquay, Ilfracombe, Sidmouth, &c.

GENUS, *GIGARTINA*, *Lamoureux.**PISTILLATA*, *Lamour.*

Harv. Phy. Brit. t. 232; Eng. Bot. t. 908.

Gathered in Whitsand Bay, near Plymouth, by Dr. Jacob, 1829; but lost sight of until rediscovered by Mr. Sanders, in the old habitat, a few years ago.

*ACICULARIS, Lamour.**Harv. Phy. Brit. pl. 104; Eng. Bot. t. 2190.*

Generally distributed, but not common. Ilfracombe, Torquay, Sidmouth, Bovisand, and Redding Point; rare. It fruits in January. Dawlish.—E. P.

*TEEDI, Lamour.**Harv. Phy. Brit. pl. 266; Turner, Fuci, t. 208, very poor.*

This handsome and rare plant was added to the British Flora by Mrs. Griffiths, who discovered it growing on rocks in Elberry Cove, Torquay, in 1811. There are some splendid specimens in Mrs. Griffiths' collection.

*MAMILLOSA, J. Agard.**Harv. Phy. Brit. pl. 199; Eng. Bot. t. 1054.*

A common plant on all our shores, and very variable.

*Sub-Order II.—SPONGIOCARPEÆ.*GENUS, *CHONDEUS, Stackhouse.**CRISPUS, Linn.**Harv. Phy. Brit. pl. 63; Eng. Bot. 2285.*

This is another most variable plant; the variation seems almost unlimited. It is extremely abundant everywhere. The largest plants, with broadest fronds, and of a deep or blackish-purple colour, are from Lynmouth. It is the "Irish moss" of the shops, and was considered a remedy in cases of consumption, but has now gone out of use.

*NORVEGICUS, Lamour.**Harv. Phy. Brit. pl. 187; Eng. Bot. t. 1080.*

Rather a rare plant, and in perfection in the winter months. Exmouth.—Sir T. Frankland. Torbay.—Mrs. Griffiths. In pools on shore rocks, Plymouth.—Mr. Boswarva.

GENUS, *PHYLLOPHORA, Greville.**RUBENS, Lamour.**Harv. Phy. Brit. pl. 131; Eng. Bot. 1053.*

Frequent on our coast, in pools left by the tide; also in deep water. Exmouth Warren.—E. P.

*MEMBRANIFOLIA, J. Agard.**Harv. Phy. Brit. pl. 163; Eng. Bot. t. 1965.*

In rock-pools; not frequent in the Plymouth District. Torbay, Sidmouth, in fine fruit.—Mrs. Griffiths.

BRODLÆI, J. Agard.*Harv. Phy. Brit. pl. 20; Eng. Bot. t. 1966.*

Parasitic on *Laminaria*, Whitsand Bay.—Mr. Boswarva.
Torbay, in fruit.—Mrs. Griffiths.

PALMETTOIDES, J. Agard.*Harv. Phy. Brit. pl. 320; Wyatt, Alg. Danmon. No. 121.*

This beautiful and rare plant was found by Mrs. Griffiths
at Sidmouth and Torquay; and at Plymouth and Whit-
sand Bay by Rev. W. S. Hore. It is in perfection in
winter and early spring.

GENUS, **GYMNOGONGRUS, Martius.****GRIFFITHSIÆ, Turn.***Harv. Phy. Brit. pl. 108; Wyatt, Alg. Danmon. No. 28; Eng. Bot. t. 1926.*

Cawsand Bay, Mount Edgecumbe.—Mr. Boswarva. Sid-
mouth, Torquay.—Mrs. Griffiths. Ilfracombe, Dawlish.
—E. P. But it must be considered a scarce plant.

PLICATUS, Kütz.*Harv. Phy. Brit. pl. 288; Eng. Bot. t. 1069.*

On rocks between tide marks; generally distributed round
our coast. Sidmouth.—E. P. Dawlish.—Mr. R. J. Gray.

GENUS, **POLYIDES, Agard.****ROTUNDUS, Lamour.***Harv. Phy. Brit. pl. 95; Eng. Bot. 1738.*

In rock-pools, between tide marks; common.

GENUS, **FURCELLARIA, Lamoureux.****FASTIGIATA, Lamour.***Harv. Phy. Brit. pl. 94; see also pl. 357; Eng. Bot. t. 824.*

A very common plant all round our shores.

Sub-Order.—**GASTEROCARPEÆ.**GENUS, **DUMONTIA, Lamoureux.****FILIFORMIS, Flor. Dan.***Harv. Phy. Brit. pl. 59; see pl. 357 B; Grev. Alg. Brit. t. 17.*

On rocks about half-tide level. Torbay.—Mrs. Wyatt.
Sidmouth, several varieties.—Mrs. Griffiths.

B. CRISPATA, Grev.*Alg. Brit. p. 165; Cryp. Flora, t. 240.*

There are two excellent examples from Torquay in Mrs.
Griffiths' collection.

GENUS, *HALYMENIA*, *Agard.**LIGULATA*, *Agard.**Harv. Phy. Brit. pl. 112; Eng. Bot. t. 420.*

Generally distributed round the coast, in rather deep water;
Cast up in storms in great quantities sometimes.

GENUS, *GIMNANIA*, *Mont.**FURCELLATA*, *Mont.**Harv. Phy. Brit. pl. 69; Eng. Bot. t. 1881.*

Whitsand Bay.—Mr. Boswarva. Sidmouth and Torbay.—
Mrs. Griffiths. In rather deep water; a rather scarce
plant.

GENUS, *KALYMENIA*, *Agard.**RENIFORMIS*, *Agard.**Harv. Phy. Brit. pl. 13; Eng. Bot. t. 2116.*

This fine but not common conspicuous species is generally
distributed round the British shores.

DUBYI, *Harvey.**Phy. Brit. pl. 123.*

On rocks and stones between tide-marks; rare. Has been
found at Plymouth by the Rev. W. S. Hore. It is a
fine and beautiful plant.

GENUS, *IRIDÆA*, *Bory.**EDULIS*, *Bory.**Harv. Phy. Brit. pl. 97; Eng. Bot. t. 1307.*

This large and conspicuous plant grows attached to rocks
near low-watermark, and is generally, though not
abundantly, distributed round our shores. Dawlish.
—E. P.

GENUS, *CATENELLA*, *Greville.**OPUNTIA*, *Lamour.**Harv. Phy. Brit. pl. 88; Eng. Bot. t. 1868.*

This curious cactus-like little plant is to be met with
frequently growing on rocks, or any submerged sub-
stance. Torbay, Salcombe, Plymouth, &c.

Sub-Order.—*GLOIOCLADIÆ.*GENUS, *CRUORIA*, *Fries.**PELLITA*, *Fries.**Harv. Phy. Brit. pl. 117; Berk. Gl. Brit. Alg. t. 1, f. 3.*

On rocks between tide-marks, closely adhering like a
crustaceous lichen.

GENUS, *WACCARIA*, *Endl.**WIGGHI*, *Endl.**Harv. Phy. Brit. pl. 38; Eng. Bot. t. 1165.*

This rare and beautiful plant has been obtained at Sidmouth and Torbay by Mrs. Griffiths. Plymouth Sound.
—Mr. Boswarva. Exmouth.—Mr. R. J. Gray.

GENUS, *GLOIOSIPHONIA*, *Carmichael.**CAPILLARIS*, *Carm.**Harv. Phy. Brit. pl. 57; Eng. Bot. t. 2191.*

A delicate and charming plant, of wide but sparse distribution around our shores; it has been obtained at both Torbay and Sidmouth by Mrs. Griffiths; Mount Edgecumbe and Wembury Bay by Mr. Boswarva. It grows in tide pools.

GENUS, *WEMALEON*, *Tozzetti.**MULTIFIDUM*, *J. Agard.**Harv. Phy. Brit. pl. 36; Wyatt, Alg. Danmon. No. 98.*

Attached to shells and rocks at low-watermark. Torbay, very rare.—Mrs. Wyatt in *Algæ Danmoniensis*. Cawsand Bay and Bovisand.—Mr. Boswarva.

PURPUREUM, *Chauv.**Harv. Phy. Brit. pl. 161; Wyatt, Alg. Danmon. No. 47.*

A rare plant, but sometimes cast ashore in quantity, as once at Sidmouth when Mrs. Griffiths was there. Whit-sand Bay.—Rev. W. S. Hore.

GENUS, *DUDESNAIA*, *Bonnemaison.**COCCINEA*, *Bonnem.**Harv. Phy. Brit. pl. 244; Eng. Bot. 2466.*

This was met with at Salcombe in fruit in August; very fine. Torbay and Sidmouth.—Miss Cutler. Also in Plymouth Sound.—Rev. W. S. Hore; but it is very rare. Exmouth Warren.—Mr. R. J. Gray.

DIVARICATA, *J. Agard.**Harv. Phy. Brit. pl. 110; Wyatt, Alg. Danmon. No. 99.*

Torbay and Sidmouth, frequent.—Mrs. Wyatt. Wembury Bay.—Mr. Boswarva. A widely-scattered species.

GENUS, *CROUANIA*, *J. Agard.**ATTENUATA*, *J. Agard.**Harv. Phy. Brit. pl. 106; Wyatt, Alg. Danmon. No. 197.*

A very rare and beautiful little plant, parasitical on *Cladostephus spongiosus*. At Salcombe.—Mrs. Wyatt. Firestone Bay, Plymouth.—Mr. Boswarva. On corallines. Very rare.

GENUS, *PTILOTA*, Agard.*PLUMOSA*, Linn.

Harv. Phy. Brit. pl. 80; Grev. Alg. Brit. t. 16, p. 155.

Parasitical on the stems of *Laminaria digitata*, &c.—Hele. Ilfracombe.—*Guide*. Torbay, very fine; bearing capsules in January.—Mrs. Griffiths.

SERICEA, Gmel.

Harv. Phy. Brit. pl. 191; Grev. Alg. Brit. p. 155.

On rocks and stones in pools between tide-marks. Plymouth.—Mr. Boswarva. *Algæ Danmon.* No. 77. Torquay.—Mr. R. J. Gray.

GENUS, *MICROCLADIA*, Greville.*GLANDULOSA*, Soland.

Harv. Phy. Brit. pl. 29; Turn. Fuci. t. 38; Eng. Bot. t. 2135.

Teignmouth.—Mr. Ralfs. Budleigh Salterton and Torquay.—Mrs. Griffiths. Plymouth Sound.—Mr. Boswarva. This beautiful and rare plant is mostly parasitic on *Rhodomenda laciniata* and *Ceramium rubrum*.

GENUS, *CERAMIUM*, Rollé.*RUBRUM*, Huds.

Harv. Phy. Brit. pl. 181; Dilw. Conf. t. 34; Eng. Bot. t. 1166.

An abundant and variable plant as regards colour. Found in rock pools, also parasitic on the larger algæ all round our shores. There is a fine specimen in Mrs. Griffiths' collection from Salcombe, the growth of which is different from any other that I have seen. It stands out conspicuous from all the rest. It is very dark in colour, being a dark purplish-red. The filaments form *corymbi* on the end of each branch, the ramuli incurved. Articulations of the principal filaments are slightly but distinctly contracted in the middle, the contraction showing a white transverse line bordered by two transverse highly coloured bands, the whole coated with coloured cellulose—the same as in *C. rubrum*.

BOTRYOCARPUM, Griff.

Harv. Phy. Brit. pl. 215.

This very distinct form was discovered on the Preston Rocks, Torquay, by Miss Amelia E. Griffiths (1844). It appears to be a very rare species, but plentiful in the spot where it was discovered.

DECURRENS, Kütz.

Harv. Phy. Brit. pl. 276; Harv. Man. 2 edit. p. 162.

Parasitical on the smaller algæ in tide pools. Bovisand, Plymouth. On the Harbrick, Torquay.—Mrs. Griffiths. A delicate and rare plant.

DESLONGCHAMPIL, Chavin.

Harv. Phy. Brit. pl. 219; Griff. in Harv. Man. p. 99.

On stones at half-tide level. Mount Edgecumbe.—Mr. Boswarva. Torbay.—Mrs. Griffiths and Wyatt.

DIAPHANUM, Roth.

Harv. Phy. Brit. pl. 193; Wyatt, Alg. Danmon. No. 87.

Parasitical on the smaller algæ in rock basins between tide-marks. North Devon, between Rillage Point and Watermouth.—*Guide to Ilfracombe.* Torbay.—Mrs. Griffiths. Exmouth, Dawlish, Plymouth.

GRACILLIMUM, Kütz.

Harv. Phy. Brit. pl. 206.

On shells and corallines at extreme low-watermark. Mount Batten, Bovisand; very rare.—Mr. Boswarva. Mewstone.—Rev. W. S. Hore.

STRICTUM, Kütz.

Harv. Phy. Brit. pl. 334; Harv. Man. 2 edit. p. 164.

On stones and corallines at low-water. Torbay. Plymouth.—Dr. Cocks.

NODOSUM, Griff and Harvey.

Phy. Brit. pl. 90; Wyatt, Alg. Danmon. No. 217.

Meadfoot, Torquay.—Mrs. Griffiths. Washed on shore at Plymouth. A widely but sparsely distributed species.

FASTIGIATUM, Harvey.

Phy. Brit. pl. 255; Wyatt, Alg. Danmon. No. 86.

This beautiful and rather rare plant was gathered by Mrs. Griffiths near low-watermark, Torquay. On *Zostera*, Mrs. Wyatt. Mount Batten and Firestone Bay.—Mr. Boswarva. I have fine specimens gathered at Sidmouth.

FLABELLIGERUM, J. Agard.

Harv. Phy. Brit. pl. 144.

Parasitic on *Cladostephus spongiosus*. Plymouth Hoe.—Mr. Boswarva. Torbay.—Mrs. Griffiths.

ECHIONOTUM, J. Agard.*Harv. Phy. Brit. pl. 141.*

In tide pools between high and low-watermarks, and also in deep water. Bovisand and Mount Edgcumbe.—Mr. Boswarva. Torbay.—Mrs. Griffiths. In its mode of growth this plant somewhat resembles *C. fastigiatum*, but in no other respect. In colour it is quite different.

ACANTHODIUM, Carm.*Harv. Phy. Brit. pl. 40; Man. p. 100.*

Both parasitical and on rocks near low-waterline. Ilfracombe, Torbay, and Plymouth; but not abundant.

CILIATUM, Ducluz.*Harv. Phy. Brit. pl. 139; Eng. Bot. t. 2428.*

In tide pools near low-water; Plymouth, Torbay, Ilfracombe, &c.; not uncommon. Exmouth.—Mr. R. J. Gray.

GENUS, **SPYRIDIA, Harvey.****FILAMENTOSA, Harv.***Phy. Brit. pl. 46; Eng. Bot. t. 2312.*

Dredged off Paignton, with fine capsules, in July. Also at Sidmouth.—Mrs. Griffiths. Firestone Bay.—Mr. Boswarva.

GENUS, **GRIFFITHSIA, Agard.****EQUISETIFOLIA, Lightf.***Harv. Phy. Brit. pl. 67; Eng. Bot. t. 1479.*

On rocks at extreme low-watermark at Sidmouth and Torbay.—Mrs. Griffiths. Bovisand and Whitsand Bay.—Mr. Boswarva. Ilfracombe.—*Guide.*

DEVONIENSIS, Harvey.*Phy. Brit. pl. 16.*

Salcombe.—Mrs. Wyatt. Plymouth.—Rev. W. S. Hore. Mount Edgcumbe, Torpoint, and Beggar's Island.—Mr. Boswarva.

CORALLINA, Linn.*Harv. Phy. Brit. pl. 214. Eng. Bot. t. 1825.*

On rocks near low-watermark. Salcombe, with fine capsules, in October; Plymouth district, a small delicate and rare plant.

SECUNDIFLORA, J. Agard.*Harv. Phy. Brit. pl. 185.*

On rocks at extreme low-water. It was discovered at Bovisand, near Plymouth, 1846, by the Rev. W. S. Hore, and at present this is the only British locality for this interesting plant.

SETACEA, *Ellis*.

Harv. Phy. Brit. pl. 184; Eng. Bot. t. 1689.

A generally distributed plant, producing its capsules in March; Exmouth.

GENUS, WRANGELIA, *Agard*.MULTIFIDA, *Huds*.

Harv. Phy. Brit. pl. 27; Eng. Bot. t. 1816.

Harbrick Rocks, Torbay; Ilfracombe.—*Guide*; Mount Batten; Bovisand, &c.—Mr. Boswarva.

Var. PILIFERA, Agard.

On rocks, Mount Edgcombe, Mount Batten, and Bovisand.—Mr. Boswarva.

GENUS, SEIROSPORA, *Harvey*.GRIFFITHSIANA, *Harvey*.

Phy. Brit. pl. 21; Wyatt, Alg. Danmon. No. 91.

Dredged from rocks in rather deep water. Torbay.—Mrs. Griffiths. Salcombe.—Mrs. Wyatt. Plymouth Sound; very rare.—Mr. Boswarva. This is one of the most elegant plants of our marine flora. It was discovered by Mrs. Griffiths in the autumn of 1833.

GENUS, CALLITHAMNIUM, *Lyngbye*.PLUMULA, *Ellis*.

Harv. Phy. Brit. pl. 242; Eng. Bot. t. 1637.

Both parasitic and on rocks at low-watermark; Watermouth; Ilfracombe.—*Guide*; Plymouth, Torquay, &c.; generally but sparsely distributed; Salcombe; very fine.

CRUCIATUM, *Agard*.

Harv. Phy. Brit. pl. 164; Wyatt, Alg. Danmon. No. 182.

This very distinct and beautiful plant has been met with at Plymouth by Rev. W. S. Hore. Salcombe.—Mrs. Wyatt. Torbay, by Mrs. Griffiths, by whom it was added to the British Flora.

TURNERI, *Dillw*.

Brit. Conf. t. 100; Harv. Phy. Brit. pl. 179; Eng. Bot. t. 2339.

Parasitical on other algæ between tide-marks. Bovisand.—Mr. Boswarva. Wyatt, *Algæ Danmon. No. 183.* Watermouth, Ilfracombe.—*Guide*.

BARBATUM, *Agard*.

Harv. Phy. Brit. pl. 165; Eng. Bot. Supp. t. 2389.

Near the Tunnel, Ilfracombe; very rare.—Mr. Ralfs. Rocks of the Hoe, Plymouth. This is one of the rarest of marine plants, so far as the British Isles is concerned.

PLUMA, Dillw.

Harv. Phy. Brit. pl. 296; Eng. Bot. Supp. t. 2894.

This well-named plant—for its fronds have just the appearance of minute feathers—is parasitical on the stems of the larger *Laminarias*. Plymouth.—Mr. Boswarva. Ilfracombe.—*Guide*.

BRODLÆI, Harvey.

Phy. Brit. pl. 129; Wyatt, Alg. Danmon. No. 184.

Parasitical on the larger algæ. Torpoint.—Mr. Boswarva. Torbay.—Mrs. Griffiths and Miss Cutler.

TETRAGONUM, Agard.

Harv. Phy. Brit. pl. 136; Eng. Bot. t. 1690.

Mostly on the fronds of *Laminaria digitata*, Watermouth, North Devon. Torbay.—Mrs. Griffiths; in fine fruit. Bovisand, Plymouth; frequent. Exmouth.—Mr. R. J. Gray.

BRACHIATUM, Bonnem.

Harv. Phy. Brit. pl. 137.

Ilfracombe and Torbay.—Mr. Griffiths. Parasitical on *Laminaria*. Wembury Bay.—Mr. Boswarva.

TETRICUM, Agard.

Harv. Phy. Brit. pl. 188; Eng. Bot. t. 1915; Dillw. t. 81.

On the vertical surfaces of submarine rocks, and between tide-marks. Torbay.—Mrs. Griffiths. Ilfracombe.—*Guide*. Plymouth; common. Sidmouth.—E. P. Exmouth.—Mr. R. J. Grey.

HOOKERI, Dillw.

Conf. t. 106; Harv. Phy. Brit. pl. 279; Dillw. Conf. t. 106.

Parasitical on various algæ. Ilfracombe, Torbay, Plymouth, on the Hoe rocks; a rather rare species.

HORMOCARPUM, Holmes (E.M.).

Grevillea, v. ii. pl. ii. p. i. t. 175.

This new species grows on fuci at low-water on Torpoint mudbank, Plymouth, where it is thrown up during storms. It appears from Mr. Holmes' description to be very distinct. There is a specimen named *Seirospora* in a collection of algæ made by Mrs. Griffiths, in the Linnean Society's Herbarium, London. Collected at Salcombe.

ROSEUM, *Lyngb.**Harv. Phy. Brit. pl. 230 ; Eng. Bot. t. 966.*

A very distinct and pretty little species, bearing capsules in September in Torbay. Plymouth, on mudbanks, &c.

BYSSOIDEUM, *Arnold.**Harv. Phy. Brit. pl. 262 ; Wyatt, Alg. Danmon. No. 185.*

Whitsand Bay.—Dr. Jacob. Salcombe.—Mrs. Wyatt. On corallines and stones, Plymouth.—Mr. Boswarva. Torbay.

POLYSPERMUM, *Kütz.**Harv. Phy. Brit. pl. 231 ; Wyatt, Alg. Danmon. No. 140.*

Parasitical on fucus, between tide-marks. Common all round the coast, producing capsules in January.

BORRERI, *Smith.**Eng. Bot. t. 1741 ; Harv. Phy. Brit. pl. 159.*

On mud-covered rocks, Mount Batten, Torpoint, Antony Passage, &c. Hele, near the tunnel, Ilfracombe, Torbay, and Sidmouth.—Mrs. Griffiths.

GRACILLIMUM, *Agard.**Harv. Phy. Brit. pl. 5 ; Wyatt, Alg. Danmon. No. 45.*

On the pier, Torquay.—Mrs. Griffiths. Mount Batten.—Mr. Boswarva. Ilfracombe.—*Guide.* Exmouth.—Mr. R. J. Gray.

THUYOIDEUM, *Agard.**Harv. Phy. Brit. pl. 269 ; Wyatt, Alg. Danmon. No. 186.*

On the sides of rocks, the Hoe, Plymouth ; on the pier, Torquay. Hele, near the tunnel, Ilfracombe. Although sparsely scattered round the coast, it must be considered a rare plant.

CORYMBOSUM, *Kütz.**Harv. Phy. Brit. pl. 272 ; Eng. Bot. t. 2352.*

Parasitical on the leaves of *Zostera* and on the larger algæ, Torbay (rare).—Mrs. Wyatt, *Alg. Danmon.* No. 92. Torpoint.—Mr. Boswarva. Sidmouth.—Mrs. Griffiths.

SPONGIOSUM, *Harvey.**Phy. Brit. pl. 125 ; Wyatt, Alg. Danmon. No. 93.*

Mrs. Wyatt, *Alg. Danmon.* No. 93. Torbay. Rare. Between Rillage Point and Watermouth, North Devon. Plymouth Sound.—Rev. W. S. Hore.

PEDICILLATUM, Agard.

Harv. Phy. Brit. pl. 212 ; Eng. Bot. t. 1817 ; Dillw. t. 108.

This exceedingly-beautiful plant is scattered all round our shores, both north and south. It is a variable plant, and in some specimens somewhat puzzling. Mr. Ralfs collected specimens of a form which had the ramuli very squarrose. This was met with at Salcombe.

FLORIDULUM, Agard.

Harv. Phy. Brit. pl. 120, A ; Dillw. Supp. t. F.

Wyatt, *Alg. Danmon.* No. 219. In pools below the Hoe, Plymouth, where the rocks are more or less covered with sand. Sidmouth.—E. P.

ROTHII, Lyngb.

Harv. Phy. Brit. pl. 120, B ; Eng. Bot. t. 1702.

On rocks near high-watermark. Ilfracombe.—*Guide.* Bovisand.—Mr. Boswarva. *Alg. Danmon.* No. 188.

DAVIESII, Lyngb.

Harv. Phy. Brit. pl. 314 ; Eng. Bot. t. 2329.

Parasitical on *Ceramium rubrum*. A very distinct and apparently a rare plant. It has been found near the tunnel, Ilfracombe, Plymouth, and Torbay.

VIRGATULUM, Harvey.

Phy. Brit. pl. 313 ; Wyatt, Alg. Danmon. No. 189.

Parasitical on *Ceramium rubrum* and other small algæ, Torbay and Plymouth.

Sub-Class III.—CHLOROSPERMEÆ.

Order XV.—SIPHONACEÆ.

GENUS, CODIUM, Stackhouse.

BURSA, Linn.

Harv. Phy. Brit. 290 ; Eng. Bot. t. 2183.

This curious and rare plant has, I believe, only been met with twice—once near Torquay by Mrs. Griffiths, and on a buoy in Stonehouse Pool by Mr. Boswarva.

ADHÆRENS, Agard.

Harv. Phy. Brit. pl. 35, A ; Wyatt, Alg. Danmon. No. 127.

On rocks at extreme low-water, Torquay.—Mrs. Griffiths. Wembury.—Mr. Boswarva. Grows in thick, dense green tufts on the rocks.

TOMENTOSUM, Stack.

Neris Brit. t. 7 ; Harv. Phy. Brit. pl. 93 ; Eng. Bot. t. 712.

Ilfracombe.—*Guide.* On rocks at low-water, Bovisand, Torbay, Dawlish, &c. Exmouth Warren.—E. P.

GENUS, *CODIOLUM*.GREGARIUM, *A. Braun*.

Rabenhorst, Flo. Alg. sect. III. pp. 20-90, f. 43.

This little plant was discovered at Teignmouth, November, 1865, by the Rev. R. Creswell, but it was not identified till the close of 1879. It had, however, been previously discovered by A. Braun in Heligoland in 1852. It grows at Teignmouth on the vertical blocks of sandstone and limestone forming the sea wall, where it spreads over a considerable space, and is of a dark velvety-green colour. In this position it is reached only by the spray of the sea at high tides. It is a perennial species.

GENUS, *BEYOPSIS*, *Lyngbye*.PLUMOSA, *Huds*.

Harv. Phy. Brit. pl. 3 ; *Eng. Bot. t. 2375*.

A widely-distributed plant, but nowhere abundant. I have some specimens, found in the upper valve of *Pecten maximus*, dredged off the south coast. Ilfracombe.—*Guide*. Plymouth, &c.

HYPNOIDES, *Lamour*.

Harv. Phy. Brit. pl. 119 ; *Wyatt, Alg. Danmon. No. 81*.

On rocks, Hele, near the tunnel, Ilfracombe.—*Guide*. Trevol and Mount Batten.—Mr. Boswarva. Torquay.

GENUS, *VANCHEBIA*, *De Candolle*.MARINA, *Lyngb*.

Harv. Phy. Brit. pl. 350 A.

On mud, Torbay and Salcombe. On mud, below Countess Weir Bridge, near Topsham.—Mrs. Griffiths and Wyatt. For other species of this genus see my "Freshwater Algæ."

Order XV.—CONFERVACEÆ.

Sub-Order I.—CONFERVEÆ.

GENUS, *CLADOPHORA*, *Kützting*.PELLUCIDA, *Huds*.

Harv. Phy. Brit. pl. 12 ; *Dillw. Conf. t. 90* ; *Eng. Bot. t. 1716*.

In rock-pools, Firestone Bay and the Hoe, Plymouth, Torbay, and Salcombe.

RECTANGULARIS, *Griff*.

Harv. Phy. Brit. pl. 12 ; *Wyatt, Algæ Danmon. No. 145*.

This delicate and beautiful plant is occasionally cast up by the tide, but appears to be very rare. Mrs. Wyatt says, "Tor Abbey and Meadfoot; extremely rare."

HUTCHINSIÆ, Dillw.

Conf. t. 109; *Harv.* Phy. Brit. pl. 124.

On the rocky bottoms of tide-pools, near low-water mark, Firestone Bay, and the Hoe, Plymouth.—Mr. Boswarva. Tor Abbey.—Mrs. Griffiths. Salcombe.—Mr. Ralfs.

DIFFUSA, Roth.

Harv. Phy. Brit. pl. 130; Eng. Bot. t. 2289; Algæ Danmon. No. 144.

In rock-pools. Bovisand, Sidmouth.—Rev. P. Creswell. Torbay.—Mrs. Wyatt. Rather rare.

RUPESTRIS, Linn.

Harv. Phy. Brit. pl. 180; Eng. Bot. t. 1699; *Wyatt*, Algæ Danmon. No. 95.

An abundant species all round our coasts.

LÆTEVIRENS, Dillw.

Conf. t. 48; *Harv.* Phy. Brit. pl. 190; Eng. Bot. t. 1854.

Ifracombe, in rock-pools; very fine. Plymouth, not uncommon. Torbay.—Mrs. Wyatt (*Algæ Danmon.* No. 143), under the name of *C. glomerata*. On sand-stone rocks, Sidmouth.—E. P. Dawlish.—Mr. R. J. Gray.

FLEXUOSA, Griff.

Harv. Phy. Brit. pl. 353; *Wyatt*, Algæ Danmon. No. 227.

On rocks. Mount Batten.—Mr. Boswarva. Torbay.—Mrs. Griffiths. This appears to be a rare plant. The plant figured by Dillwyn (pl. 21) is, I think, undoubtedly *C. flexuosa*, and not *diffusa*.

GRACILIS, Griff.

Harv. Phy. Brit. pl. 18; *Wyatt*, Algæ Danmon. No. 97.

Parasitic, on the leaves of *Zostera*, Torbay. The curious pectinated branchlets distinguish this species from all others. In rock-pools on stones, Firestone Bay.—Mr. Boswarva.

REFRACTA, Roth.

Harv. Phy. Brit. pl. 24; *Wyatt*, Algæ Danmon. No. 228.

Ifracombe, in quiet bays, and at Salcombe.—Mrs. Griffiths. Torbay.—Mr. Ralfs.

ALBIDA, Huds.

Harv. Phy. Brit. pl. 275; *Dillw.* Conf. p. 66, t. 2; Eng. Bot. t. 2327.

On rocks and on algæ at Harbrick.—Mrs. Griffiths. Bovisand and Cawsand Bay.—Mr. Boswarva. Dawlish.—Mr. R. J. Gray. Not common.

LANOSA, Roth.

Harv. Phy. Brit. pl. 6 ; Eng. Bot. t. 2099 ; Wyatt, Algæ Danmon. No. 194.

Common on the larger algæ, forming thick woolly tufts ; all round the coast.

UNCINALIS, Fl. Dan.

Harv. Phy. Brit. pl. 207 ; Wyatt, Algæ Danmon. No. 146.

On rocks, partly imbedded in sand. Bovisand.—Mr. Boswarva. Wildersmouth.—*Guide*. Torbay.—Mrs. Griffiths.

GLAUCESCENS, Griff.

Harv. Phy. Brit. pl. 196 ; Wyatt, Algæ Danmon. No. 195.

On rocks in Torbay.—Mrs. Griffiths. Firestone Bay and the Hoe, Plymouth.—Mr. Boswarva.

ARCTA, Dillw.

Conf. Supp. p. 67, t. E. ; Eng. Bot. t. 2098 ; Wyatt, Algæ Danmon. No. 46.

On rocks in Torbay. There are specimens in Mrs. Griffith's collection, with no locality given. Bathing Cove, Torquay.—Wyatt.

GENUS, *RHIZOCLONIUM, Kütz.**RIPARUM, Roth.*

Harv. Phy. Brit. pl. 238 ; Eng. Bot. t. 2100.

On sand-covered rocks near high-watermark. Torquay.—Mrs. Griffiths. I have gathered *R. Casparyi* growing at high-watermark on sandy mud on the banks of the canal between the Topsham Ferry and Turf. See my "Freshwater Algæ," p. 31.

GENUS, *CONFERVA, Pliny.**TORTUOSA, Dillw.*

Conf. t. 46 ; Eng. Bot. t. 2220 ; Harv. Phy. Brit. pl. 54 A.

On rocks between tidemarks. Ilfracombe, Plymouth, Torbay, &c.

IMPLEXA, Dillw.

I have included this species in the freshwater algæ, as the plant flourishes equally well where the water is just brackish as it does when growing in pools of salt water.

*ARENOSA, Carm.**Harv. Phy. Brit. pl. 54, C.*

Tor Abbey sands.—Mrs. Griffiths. On sandy shores at half-tide level.

*MELAGONIUM, Web. and Mohr.**Harv. Phy. Brit. pl. 99 A; Wyatt, Algæ Danmon. No. 221.*

In rock pools. Whitsand Bay.—Mr. Boswarva. Torbay.
—Mrs. Griffiths.

*ÆREA, Dillw.**Harv. Phy. Brit. pl. 99 B.*

On sand-covered rocks, Whitsand Bay. Ilfracombe.—
Guide. Torbay.—Mrs. Wyatt. The Ilfracombe plants
have the filaments of great length.

*BANGIOIDES, Harvey.**Phy. Brit. pl. 268.*

On rocks near low-watermark. Torquay.—Mrs. Griffiths.
Breakwater, Plymouth.—Mr. Blatch. It is one of our
rarest marine plants.

Order XVI.—ULVACEÆ.

GENUS, *ENTEROMORPHA, Link.**INTESTINALIS, Linn.**Harv. Phy. Brit. pl. 154; Eng. Bot. Sup. t. 2756.*

An abundant species all round our shores.

*COMPRESSA, Linn.**Harv. Phy. Brit. pl. 335; Eng. Bot. t. 2739.*

Very abundant everywhere, and the varieties are numerous.

Var. LATIFOLIA.

Dawlish.—Mr. R. J. Gray.

*LINKIANA, Grev.**Algæ Brit. p. 182; Harv. Phy. Brit. pl. 344.*

On stones in the sand, Mount Edgcumbe.—Mr. Boswarva.

*ERECTA, Lyngb.**Harv. Phy. Brit.; Wyatt, Algæ Danmon. No. 166.*

Livermead rocks.—Mrs. Griffiths. Plymouth district not
very common. Dawlish.—Mr. R. J. Gray.

*CLATHRATA, Roth.**Harv. Phy. Brit. pl. 340; Wyatt, Algæ Danmon. No. 34.*

Tor Abbey sands.—Mrs. Griffiths.

RAMULOSA.

Eng. Bot. t. 2137 ; *Harv. Phy. Brit.* pl. 245 ; *Wyatt, Algæ Danmon.* No. 208.

Tor Abbey rocks.—Mrs. Griffiths. There is also in this lady's fine collection a variety with broad fronds, found in Torbay ; also a variety, "minor," gathered at Salcombe and Exmouth.

HOPKIRKII, M'Calla.

Harv. Phy. Brit. pl. 263.

This beautiful and distinct species was dredged in Torbay by Mrs. Griffiths, 1838. It appears to be very rare.

PERCURSA, Agard.

Harv. Phy. Brit. pl. 352.

On rocks, Tor Abbey.—Mrs. Griffiths. Parasitic on fucus at the mouth of the Exeter Canal ; on mud-banks at high-tide level near Topsham Bridge.—E.P.

GENUS, ULVA.**LATISSIMA, Linn.**

Harv. Phy. Brit. pl. 171 ; Eng. Bot. t. 1551.

Abundant on all our shores between tide-marks and to ten or twelve fathoms.

LACTUCA, Linn.

Harv. Phy. Brit. pl. 243 ; *Grev. Scot. Cryp. Fl.* t. 313.

On rocks, &c., between tide-marks ; common.

LINZA, Linn.

Harv. Phy. Brit. pl. 39 ; *Wyatt, Alg. Danmon.* No. 164.

Torbay.—Mrs. Griffiths. Plymouth. Ilfracombe in more or less abundance.

GENUS, PORPHYRA, Agard.**LACINIATA, Lightf.**

Harv. Phy. Brit. pl. 92 ; Eng. Bot. 2286.

Common between tide-marks all round our coasts in summer.

VULGARIS, Agard.

Harv. Phy. Brit. pl. 211 ; *Grev. Alg. Brit.* t. 18, p. 170.

Also common with the above. These are the so-called "Lavers," and when prepared are sold in shops and eaten as a vegetable.

GENUS, **BANGIA**, *Lyngbye*.**FUSCO-PURPUREA**, *Lyngb.**Harv. Phy. Brit. pl. 96 ; Eng. Bot. t. 2055.*

Torbay and on Plymouth Breakwater.—Mrs. Griffiths.
Ilfracombe.—*Guide*.

CERAMICOLA, *Chauv.**Harv. Phy. Brit. pl. 317 ; Hooker, Brit. Fl. ii. p. 355.*

Parasitical on *Cutleria multifida*. Torbay.—Mrs. Griffiths.

CILIARIS, *Carm.**Harv. Phy. Brit. pl. 322.*

On rocks. Mount Batten.—Mr. Boswarva.

Order **XVII.**—**OSCILLATORIACEÆ.**Sub-Order, **RIVULARIÆ.**GENUS, **RIVULARIA**, *Roth.***PLICATA**, *Carm.**Harv. Phy. Brit. pl. 315.*

On rocks between tide-marks, and also where the tide only
reaches occasionally. Torquay.—Mrs. Griffiths. High-
watermark, Wildersmouth.—*North Devon Guide*.

ATRA, *Roth.**Harv. Phy. Brit. pl. 239 ; Eng. Bot. t. 1798.*

On rocks and corallines between tide-marks. Very abun-
dant all round the coast, having the appearance of shot,
or when grown on hard rocks like split shot.

NITIDA, *Agard.**Harv. Phy. Brit. pl. 68 ; Berk. Glo. t. 2, f. 1.*

On rocks at Bovisand, Plymouth.—Mr. Boswarva. Rocks,
Tor Abbey.—Mrs. Wyatt in *Algæ Danmoniensis*, No. 50.
See my "Freshwater Algæ" for the generæ *Schizosiphon*
and *Schizothrix*.

GENUS, **CALOTHRIX**, *Agard.***CONFERVICOLA**, *Dillw.**Harv. Phy. Brit. pl. 254 ; Eng. Bot. t. 2576.*

Parasitical on the smaller algæ, such as *Ceramium rubrum*,
Mount Edgecumbe, Paignton, Torbay, and all round the
south coast.

PANNOSA, *Agard.**Harv. Phy. Brit. pl. 76.*

On *Corallina officinalis* in rock pools near high-watermark,
also on rocks and fuci, Sidmouth.—Rev. R. Creswell.

SEMIPLANA, Agard.*Harv. Phy. Brit. pl. 309.*

In rock pools, growing on corallines and the smaller algæ,
Sidmouth.—Rev. R. Creswell.

HYDNOIDES, Carm.*Harv. Phy. Brit. pl. 306.*

Growing in thick tufts on clayey places on the shore near
high-watermark, Sidmouth.—Rev. R. Creswell.

GENUS, LYNGBYA, Agard.**MAJUSCULA, Dillw.***Conf. Suppl. t. A ; Harv. Phy. Brit. pl. 62.*

On rocks at Saunton, North Devon.—Miss Hill. Ilfracombe.
—Mr. Ralfs. Torbay.—Mrs. Griffiths. Washed up at
Mount Edgecombe.—Mr. Boswarva.

FERRUGINEA, Agard.*Harv. Phy. Brit. pl. 311.*

On the muddy sides of the mouth of the Exeter canal, on
fuci partially covered with mud.—E. P.

CARMICHAELII, Harvey.*Phy. Brit. pl. 186, A ; Wyatt, Alg. Danmon. No. 230.*

Parasitic on fuci and on rocks, Plymouth and Torbay.—
Mrs. Wyatt. Salcombe.—Mrs. Griffiths. Parasitic on
fucus at the mouth of the Exeter canal; rather rare.
—E. P. In Mrs. Griffiths' collection is a form apparently
between *Carmichaelii* and *Speciosa*, collected in Torbay.

SPECIOSA, Carm.*Harv. Phy. Brit. pl. 186, 13 ; Wyatt, Alg. Danmon. No. 196.*

Parasitic on fuci, &c., between tide-marks, Paignton,
Torbay.—Mrs. Griffiths.

CUTLERIÆ, Harvey.*Phy. Brit. pl. 336.*

Discovered by Miss Cutler, of Budleigh Salterton, on
stones at the mouth of the Otter, where it is covered by
the sea at every tide.

Order XVIII.—NOSTOCHACEÆ.

See my "Freshwater Algæ" for the species met with
in Devon.

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98.

THE SAINTHILLS OF BRADNINCH, DEVON:

BEING A PEDIGREE OF THE FAMILY,

WITH NOTES THEREON, AND COPIES OF DOCUMENTS RELATING TO
THE FAMILY HISTORY.

BY FRANCES B. TROUP.

(Read at Tavistock, August, 1889.)

THE origin of the name Sainthill is said to be obscure; it is possible that it may be a corruption of the old name of Sancto Hyllario, or Saint Hilary, which occurs in Somerset in 1220; or it *may* mean "holy hill." There is a hamlet in the parish of Kentisbeare called Sainthill, and the manor of Sainthill, or Sweynthull, belonged to the abbey of Dunkeswell. The Sainthills are supposed to be descended from the Sweint-hills, of the vicinity of Honiton. There was a Walter de Sweinthill, or Swengetil, member of Parliament, in the time of Edward II. and Edward III. (see *Olla Podrida*, i. 309); but he had no son. His brother, Reginald de Sweinthill of Wadheys, in Awliscombe, in the time of Edward II., is supposed to have left descendants; but the connecting-links between this Reginald and the first Sainthills of the *Heralds' Visitations* are yet to be discovered. In the *Heralds' Visitations of Devonshire*, 1564, the first Sainthill is called Robert; in that of 1620 he is called Richard. In Sainthill's *Olla Podrida* (i. 322) we read:

"RICHARD SAINTHILL, of Sainthill, was born in 1470, and died in 1540, leaving two sons. Peter, the eldest, was settled at Bradninch; Edward, the second son of Richard, settled at Rockbeare."

The *Heralds' Visitation* of 1620 mentions a "second son"—John of Merton, ancestor of the Hemiock family; but omits to mention Edward of Rockbeare.

PETER SAINTHILL, of Bradninch. Among the deeds and records of the borough of Bradninch is "an award on the

subject of tithes, between Peter Sainthill, esq., the impropriator, and the inhabitants, A.D. 1556."¹ Dr. Oliver² says the Sainthill family "have been impropriators of all the tithes and glebe lands of the parish [of Bradninch] under the Dean and Canons of Windsor since the time of Edward VI." From the same authority we learn that the Dean and Canons of Windsor obtained the impropriation of Bradninch from that king. As his reign dated from January 28th, 1547, to July 6th, 1553, it seems probable that Peter Sainthill was the first to hold the impropriation of the tithes under the dean and canons. This same Peter also obtained the manor and advowson of Rockbeare, as appears from the following quotation from *Olla Podrida* (i. 317 Pedigree): "Peter Sainthill of Bradninch obtained a Licence of Alinea-tion from the Crown dated 9 October anno 7 Eliz. 1565 to settle (in consideration of 8l. 16s. 1½d.) the manor and advowson of Rockbeare in con. Devon, parcel of the possessions of the dissolved monastery of Canonsleigh, together with lands called Westwood in the same parish, also part of the said possessions, to William Fleetwood, Esq., Thomas Taylor, Bartholomew Pope, and John Wilford, Gents, to hold the same in trust to and for the use of Juliana, then wife of the said Peter Sainthill for life, with remainder to the use of the said Peter Sainthill and his heirs. (Record in Rolls Chapel.)

"In the year 1564 he added the lives of Peter, Mary, and Richard Sainthill on the mill tenement as appears by copy of Court Roll of the manor of Bradninch, anno 33 Eliz. 1590, for adding the lives of Elizabeth Sainthill, Barbara Sainthill, and Julian Denner in reversion of said Peter, Mary, and Richard." Peter and Mary were his own children. Richard was his nephew, in all probability; for there was "an answer of John Furze to a Bill of Complaint filed in the Exchequer, A.D. 1625, by Richard Sainthill of Rockbeare, Gent, and John Culverwell of Bradninch, Fuller." It refers to Kensham, or Kenisham Mills, and in it occurs this paragraph, according to the copy given in *Olla Podrida* (i. 319): "and that the same demise was procured by the said compl^t Richard Sainthill his father, or by Peter Sainthill his uncle, as this defendant verily believeth (the said Peter being then officer, steward, or under steward of the said manor of Bradninch)." Perhaps "Richard Sainthill his father" is simply the old possessive form, for the *Olla Podrida* pedigree gives Richard Sainthill as the son of Edward.

¹ *Olla Podrida*, i. 293.

² *Eccles. Antiq.* ii. 16.

Children of Peter and Juliana (Shine) Sainthill.

PETER appears to have married Elizabeth Martin prior to 1590, as by the above quotation from the Bradninch Court Roll he added the lives of Elizabeth Sainthill, Barbara Sainthill, and Julian Denner in that year to the mill tenements. The Elizabeth Sainthill here referred to may have been his wife, or his eldest daughter, and Barbara Sainthill may have been his second daughter. If so, both these daughters would have been born before his son Peter (b. 1593), which is more than probable, as the third daughter, Julian, was born in 1594. A stone in the floor of Bradninch Church is thus inscribed: "In memoriam Petri Sainthill, armigeri; Elizabethae uxoris ejus, et Mariæ filiae, Vivant in coelo in gaudio et gloriâ."³ Dr. Oliver⁴ gives the inscription "In memoriam Petri Sainthill, Armigeri, Elizabethæ uxoris ejus et Mariæ Filie eorum: vivant in celo in gaudio Christi."

MARY "was admitted at a Court of the manor of Bradninch, anno 13 Eliz. 1570, to the reversion of a certain tenement, by the description of 'Mary Sainthill, daughter of Peter Sainthill, Esq.'"⁵ This would indicate that she was not married to Henry Martin, of Steeple Morden, until after that date. I have presumed that the "cousin, John Martin," frequently mentioned by the cavalier, was her son.

Children of Peter and Elizabeth (Martin) Sainthill.

PETER, the cavalier. I have given his history at some length in my account of his notebook.

HUMPHREY, Rector of Zeal Monachorum, died some time in 1629, as in January, 1629-30, administration of his goods was granted to his brother Peter.⁶

Dr. Oliver⁷ gives a pedigree of the Sainthills of Bradninch, which is at fault in several particulars: he there mentions John, son of Peter and Elizabeth, who was born in 1545, and died 1593. The first date is evidently wrong, as the father (Peter) was not born until 1561. I find no other mention of this John, even in the *Heralds' Visitation* of 1620, so I have omitted him from this pedigree.

THOMAS, third son in the *Heralds' Visitation* of 1620. Dr. Oliver gives the date of his birth as 1600. He probably died soon after 1620.

ROBERT, fourth son in the *Heralds' Visitation* of 1620.

³ Vide *Olla Podrida*, i. 294.

⁴ *Eccles. Antiq.* ii. 17.

⁵ *Olla Podrida*, i. 317 Pedigree.

⁶ See *Bishop's Register*.

⁷ *Eccles. Antiq.* ii. 19.

Dr. Oliver gives the date of his birth as 1604. He was the agent from King Charles I. to the Grand Duke of Tuscany. This position he held as early as, if not earlier than, 1640. In a petition to Charles II., in 1662, he states that "the late King ordered him an allowance of 40s. a day as agent to the Duke of Tuscany, with charges for travelling, intelligence, &c., which for six years to the time of the King's death amounted to 4,380*l*."⁸ In 1663 a warrant was issued to the Lord Treasurer "to treat with the heirs of Dr. Arthur Duck, Sir George Strode and Robert Sainthill for payment of 7000*l* advanced to the late King at Oxford on security of Grafton and (Potter's) Pury Parks, co. Northampton, in order that the same may be granted to the Queen as part of her jointure."⁹ Possibly the advance here mentioned is the same as that referred to in another petition of Robert Sainthill's dated 1662. "2000*l* advanced to the late King to bring his army out of Cornwall."¹ By the reference in 1663 to the heirs of Robert Sainthill, one might infer that he had died before that year. Dr. Oliver gives the date of his death as 1664, but there is among the *State Papers*² a letter dated London, March 29th, 1665, from Robert Sainthill to William-son, in which he begs the return of certain papers which he gave three years before to the king, who delivered them to Sec. Bennett; "the Lord Treasurer being unable to pay him, tried to obtain payment from the customs, excise, or chimney money, but in vain. Was ordered to think of something that could be done for him and has now a proposal to make about a beneficial trade to Tangiers." He seems to have been interested in matters in Italy as early as 1635-6, for there are letters³ from Thomas Jennings and Robert Sainthill to Francis Mastola and Edward Wright, Genoa, and also to Thomas Wright, merchant, of Leghorn. Thomas Jennings is probably the Mr. Thomas Jennings who is frequently mentioned in the Sainthill manuscript notebook.

BARBARA married Peter Bankes, clericus, according to the *Heralds' Visitation* of 1620. Westcote describes him as "minister of Bradninch." It is possible that Barbara Sainthill had married a Peck for her first husband; if so, the following entry from Colonel Vivian's *Marriage Licences of the Diocese of Exeter*, p. 65, would refer to her—"1619, October 23rd, Peter Banckes, clerk, curate of Bradynche, and Barbara Peck, widow, of the same." This is more than likely to be the case, as the marriage took place prior to the Visitation, and it

⁸ *State Papers, Domestic*, 1662.

¹ *Ibid.* 1662.

² *Ibid.* 1635-36.

⁹ *Ibid.* 1663.

³ *Ibid.* 1635-6.

is hardly probable that there were two Peter Banks, clerks, of Bradninch, who married two Barbaras, especially as we find that Peter Bankes was admitted rector of Zeal Monachorum on the death of Humphrey Sainthill in 1629-30.⁴

JULIAN, entered in the *Heralds' Visitation* of 1620 as married to "Pet Burye, clericus," it has been suggested that it should be Peter Bere. John Bury of Broadnymett, clerk, was one of the three who made oath in 1646 concerning Peter Sainthill's residence in Exeter.⁵ I also find Samuel Sainthill, in his MS. accounts, mentions his "cousin Bury," his "godson Bury," and "Sainthill Bury." Col. Vivian writes to me as follows: "John Bury . . . was living 1 August, 1661, when his son, Sainthill Bury of London, merchant, made him executor of his will." Possibly "John Bury of Broadnymett, clerk," was son of Peter Burye. Dr. Oliver gives the date of Julian's birth as 1594; he seems to take her for a son.

MARY, entered in *Heralds' Visitation* of 1620 as unmarried; she probably died unmarried, as she was buried with her father and mother.⁶ As her parents died in 1613 and 1618, it is possible that she did not live long after 1620.

Children of Peter and Dorothy (Parker) Sainthill.

PETER.—Dr. Oliver gives the date of his birth, and adds "ob. an infant." I can find no other mention of him.

SAMUEL.—I have given his history at some length in my account of the MS. notebook of himself and father. He erected a monument to his father in Bradninch Church, which is given at length on page 394.

PETER.—Mentioned in his father's notes on a copyhold estate in Bradninch, dated 14 December, 1631, and also under date of 24 July, 1644. Samuel Sainthill does not mention this brother, so it is probable he died before 1649. Dr. Oliver gives the date of his birth as 1631, but he confounds him in the pedigree with his father, a generation being incorrectly interpolated; the date of his death is given as 1670 there also.

ROBERT.—Dr. Oliver gives the date of his birth as 1636, and his death as 1691; this latter is an error. From Samuel Sainthill's accounts it appears that he died between the 14th and 20th of May, 1664, and administration was granted at Exeter on his effects to his brother Samuel on 6 September, 1664, as is recorded in the *Olla Podrida* pedigree.

⁴ *Bishop's Register.*

⁵ See p. 390.

⁶ See inscription on stone in Bradninch Church quoted under Peter Sainthill.

GRACE, mentioned in her father's note of a copyhold estate in Bradninch, dated 17 December, 1628, and also mentioned under date of 24 July, 1644. Samuel Sainthill makes no mention of her in his accounts; it is probable she died before 1649.

REBECCA.—Dr. Oliver gives the date of her birth as 1634. She was mentioned in her brother-in-law John Hancock's will of 25 June, 1660, and she was then unmarried. She is, I believe, the sister mentioned by Samuel Sainthill, 25 June, 1670.

COPIES OF DOCUMENTS

CONNECTED WITH

THE HISTORY OF THE SAINTHILLS OF BRADNINCH.⁵

From original papers in His Majesty's State Paper Office, London.

"Lord Geñall Fairfax's Passe for Mr. St Hill.

"Suffer the bearer hereof, Peter Sainthill (who was an inhabitant of the citty of Excester within 7 monthes before the surrender thereof, and is to have the benefitt of the articles), with his servants, horses, armes, and necessaries, to pass yo^r guards to Broadnimet, or elsewhere to any place in the power of the parl^t if he shall have occasion; and to enjoy and dispose of his goods, debts, and moveables (allowed by the articles) for the space of 4 monthes from the 9th of Aprill instant, without molestason. Given under my hand and seale, at Excester, the 17th day of Aprill, 1646.

T. FAIRFAX.

To all Officers and
Souldiers under my
cōmand, and all others
whom these may concern."

The following petition is entirely in the handwriting of the cavalier, except the signature "T. Davis."

"To the Hon^{ble} Comitte of Gould Smithes Hall. The humble Petition of Peeter St. Hill, of Bradninch, in the County of Devon, Esq.

"Sheweth,

"That y^r Petit^r is wthin the Artickles of Exter, to w^{ch} he doth submitt. That he havinge earnest occasions to his brother Robert St. Hill, marchant at Ligorne, w^{ch} could not be effected wthout y^r petiⁿ^r being theare, did make a iourney thither, in w^{ch} he fell dangerously sicke, & is not yett able to travell (as by certificate annexed appeareth); y^r petiⁿ^r therefore hath sent a p^ticuler of his estate to this Hon^{ble} Comitte, to make his compisition for his delinquency, according to the sayd Artickles.

"Your Petiⁿ^r most humbly beseecheth this hon^{ble} Comitte to

⁵ *Olla Podrida*, i. p. 311 *et seq.*

admit him to his compisition accordinge to the sayd Artickles, to be prosecuted by his friends, and that his unavoydable absence may be noe p̄iudice to him in poynt of time; for which justice and favor

“Yr Peti’n^r shall ever pray, &c

“Thomas Davis,

“Ag for Mr. Peetter S^t Hill.”

“24th July 1646.

“Ordered, that Mr. Sainthill bee admitted upon this peti’oⁿ to compound according to the proposi’oⁿs, and his friends to prosecute his composi’oⁿ, giving security that hee shall come within six monthes and take the oath and covenant, and left to y^e house whether at to compound on the proposi’oⁿs or the Articles of Exeter.”

Appended to Mr. Sainthill’s petition to compound :

“John Were, of Selferton, in the countie of Devon, Esquire, and John Bury, of Broadnymett, in the said countie, Clearke, and John Butler, of the countie and cittie of Exon, merchant, make oath that Peter Sainthill of Bradninch, in the said countie of Devon, Esquire, did inhabite in the said cittie of Exon, with his wife, children, and servants, by the space of one whole yeare or thereabout before the end of September last past, w^{ch} they more certainly knowe, for that these deponents were there for the most part resident with him; and they further depose, that the said Peter Sainthill went from thence about the end of September, or the beginninge of October last past, but the precise day they remember not, and left his wife and familie there, who stayed there till about six weeks before the rendi’oⁿ of the said cittie.

“John Were

“Joh. Bury

“John Butler

“Œes tres jurati 5 Augusti, 1646

“Robt. Hylett.

“To all persons whom these may concerne.

“Whereas wee whose names are underwritten have been moved to make our certificate of the state of the body of Peter Sainthill Esq. arrived in these parts out of England in May last, whether he be able, in our opinion, to returne now into England without daunger of his boddily health, doe humbly certify, y^t we, considering the indisposition of his body, and the disease of the stone w^{ch} which he is much troubled (and for the cure whereof he is advised to use the bathes here), and the fervent heat of the yeare in this hott country of Italy and France, through w^{ch} he is to passe, and upon credible information given us y^t he came hither not without great difficulty and sicknesse by the way, doe, in our judgm^t, hold the said Mr. Sainthill unable now to p’form y^e said voyage without

great daunger of boddly health. In testimony whereof we have here unto set o^r hands

"Livorno, 15th June,
1646

"Samuel Bispham, Med. Dr.
"Morgan Read, Consull
"Tho. Burnslly
"Philip Williams
"Nicho. Abdy
"George Man."

With the exception of the signature of Thomas Davis, the following is entirely in the writing of the cavalier himself:

"A particular of the state of Peter S^t Hill of Bradninch in the county of Devon.

	Per annum.		
	s.	s.	d.
"DEVON.—The rectory impropriate of Rockbeare in fee simple in possession, worth per ann. three score and six pounds thirteene shillings four pence .	066	13	4
<i>It.</i> Old rents in Rockbeare five pounds per ann. out of w ^{ch} is paid to the Kinge, £3 per ann. remayneth cleare in fee simple. ⁶ . . .	002	0	0
"YORK.— <i>It.</i> The moytie of the man ^r and other lands and tythes in South Covertton, ⁷ formerly worth one hundred and forty pounds per ann. in fee simple	140	0	0
"DEVON.— <i>It.</i> A lease for fiveteen yeares of the rectory of Bradninch, held of the Deane and Canons of Windsor, at the rent of £53 per ann. there being noe vicaridge endowed, is charged with £15 per ann. w ^{ch} beinge to little, the Curatt had over to the value of £40 per ann. w ^{ch} beinge deducted, there resteth cleare £167 per ann. .	167	0	0
"DEVON.— <i>It.</i> A copihold estate in Keinsham Milles, p ^c ell of the man ^r of Bradninch, and other lands there, for three lives, viz. of his wife Mary, ⁸ his daughter, and Samuel his sonn, charged with a rent of six pounds per ann. to the Prince, L ^d of the man ^r ; is only ten ^t in the right of his wife duringe her life; worth formerly ultra reprisas, £110 per ann. .	110	0	0
"WARWICK.— <i>It.</i> Lands in Warwicksheire, called Scolfeild, ⁹ and the Strepp, ¹ for two lives, worth £60 per ann. charged with £12 rent, is of cleare value worth £48 per ann. . . .	48	0	0
	533	13	4

"Thomas Davis A^s for Mr Peeter St Hill

⁶ See note by Samuel Sainthill concerning these rents, page 399.

⁷ South Covertton.

⁸ Misplaced comma. His wife was Dorothy, his daughter was Mary. See pedigree.

⁹ Sholdfeilde. See page 397.

¹ The Stripe. See page 397.

"Debts owing by Mr Peeter S^t Hill.

" <i>Imps.</i> To Mr John Laurence ² in Cheapesyde,			
principall money	500	0	0
<i>It.</i> To Mrs. Ann Hancocke, ³ principall debt	500	0	0
<i>It.</i> To the land lorde for rent arere	180	0	0
<i>It.</i> He prayeth to be allowed for an annuities of £20 per ann. w ^{ch} he is to pay duringe the lives of Mrs Mary Davye, Mary Dunsford, Mary S ^t Hill.			

"This is a true particular of all the estate real and personal of Peter S^t Hill of Broadninch, in the county of Devon, Esq. for which he onely desires to compound, and I, Thomas Davis, of the parish of Stepney, for and in his behalfe, and being by him thereunto authorized, doe submit unto and undertake to satisfy and pay such fine as by this Com^{tee} for composition with delinquents shall be imposed and sett to pay for the same, in order to the freedom and discharge of the person and estate of the said Peter S^t Hill.

"Thomas Davis, A^s for Mr Peetter St Hill."

In the cavalier's petition to compound for his estates, he says, "That your Petitioner about the beginning of the late seidge of Exeter, went out of Exeter into Cornwall and thence to Ligorre in Italy."⁴

From the MSS. in the possession of George Pearce, Esq., of Bradninch House, Devon :

"To the Hon^{ble} the Commissioners for compounding wth Delinquents.

"The humble Petition of Samuel Sainthill, sonne and heire of Peter Sainthill, Esq. deceased.

"Humbly sheweth,

"That the sayd Peter Sainthill being in Italy at the time of the surrender of Exeter about his private affayres, yet being comprized wth in the Articles, did after accordingly petition wth in the fower monthes to the then Committee for Compositions at Goldsmiths' Hall, who admitted him to compound thereupon by the order of 28th July, 1646, annexed. That he continuing sick, was disabled to retourne and take the oath and covenant wth in that time, but dyed thereof in Italy ; the Committee not admitting him to perfect his composition and discharge his estate before the oath and covenant were taken.

"Your Petitioner therefore humbly prayeth, that his sayd father's composition being delayed wthout any default or neglect of his, that he may be admitted to compound for his estate, according to the rates in the sayd Articles w^{ch} have since bin allowed to all others in like case wth him.

"And your Petitioner shall pray, &c. "Samuel Sainthill."

² Apothecary. See page 400. ³ Sister of John Hancock, of Combe Martin.

⁴ *Olla Podrida*, i. 306.

"Haberdashers' Hall, London.

"By the Commissioners for compounding, &c., the 24th of September, 1651.

"Whereas by an Act of Parliam^t of 15th of Aprill, 1650, this Com^{tee}, or any fower of them, are authorised to put in execution all and every the powers and authorities given (and now in force) unto the late Com^e for compounding; and whereas Samuel St^t Hill of Bradninch, in the county of Devon, Gent. hath submitted to a fine imposed on him for his delinquency, according to the rules and proportions sett and confirmed by Parliam^t, and hath payd and secured the same according to order; These are therefore by vertue of an Act of Parliam^t of the 9th Aprill, 1649, to order and require all com^{rs} for sequestration, and other officers whatsoever whom the same may concern, to forbear all further proceedings upon the sequestration of the estate of the said Samuel Sainthill, compounded for according to a particular thereof, delivered into this Com^{ee} under his hand (a copy whereof is herewith sent you), from the day of the date hereof, being the day of paym^t and securing of his said fine; and that noe further prejudice be don to the sayd estate upon pretence of the former sequestrations: Provided this composition shall not extend to any act of treason committed since the first of February, 1648, and that the compounder was not in Pendennis Castle at the surrender thereof, nor in those Articles. But if there shall be any further estate belonging to the sayd Samuel St Hill not mentioned in the sayd particular, or that the estate therein exprest were before these troubles of greater value than by the sayd particular geven in, the profits of such estate soe comitted, as also the surplusage of w^h is specified, is not hereby to be suspended, but to remayne under sequestration as before, untill further order from us. And if the sayd estate or any parte thereof be leased out to any person by such who have power to sett the same, the compounder is to satisfy himselfe wth the rent for w^{ch} the same is soe lett, during such time, or the remainder of such time for w^{ch} the same is leased as aforesaid.

"To the Com^{rs} for Sequestration in the County of Devon, and all other whom it may concerne.

Sam Moyer

Ar Squibb Will^m Molins

"Edw Winslowe.

"Jo Leech fine sett 9 Sept 1651, at ab^t £744 15s."

From among copies of the pleadings, &c., before "The Honourable the Commissioners for Compound with Delinquents."

"Received by us Richard Waring and Michael Herring, Treasurers of the money to be paid into Goldsmith's Hall, of *Samuel St. Hill of Bradninch, in the county of Devon, Gent.* the summe of *Three Hundred Seventy Fower Pounds, Seventeen Shillings, Six*

pence, in parte of Seven hundred forty nine Pounds, fifteen Shillings (£374 17s. 6d.) Imposed on him by the Parliament of England, as a fine for his delinquency to the Commonwealth. We say Received this 24th day of September 1651, in parte. *Ri Waringe*

"I have taken notice of this acquittance

September y^e 24, 1651

Ri Sherwyn, auditor

"Take Mr. John Laurence of Colesbury, Parish Justiciary, wth Mr. St. Hill for security

"Mr. H

"Security is taken by me 29^o Sept. 1651

J. Bayley^s"

Inscription on a monument on the north wall of the chancel of Bradninch Church:

"To the memory of Peter Sainthill, esq. well knowne in this place for his piety, charity, and justice, sonne of Peter Sainthill, esq. and grandsonne of Peter Sainthill, esq. all inhabitants of this ancient Burrough (the 2 last lying in a vault under the Communion-table in this chancell), who having served K. Charles I. in honourable charges, both civil and military, according to the obligation of his oath; to reserve himselfe for more sucessfull service to his King and country, in the yeare 1646 withdrew into Italy to his brother Robert Sainthill, esq. then agent with the greate Duke of Tuscany from King Charles I. where having spent the remainder of his life in the exercise of vertue and devotion, and lamenting the miseries a civil warre had brought upon his country, he resigned his spirit to God who gave it, in the yeare of Grace 1648, and the 54th yeare of his age.

"Samuel Sainthill, his sonne and heir, both of his fidelity to his Prince and estate, though impayr'd and lessened by his father's loyalty, dedicates this marble, and desires the memory of ye reader for the piety of the act which he caused to be done in the yeare of Grace 1679.

"Cœtera memorent Posterì.

"The above-mentioned Samuel Sainthill, esq. who erected this monument, lyes also buried under the Communion-table of this Church. He departed this life the 14th of November, 1708, in ye 83^d yeare of his age."

^s A printed form, the words in italics being filled in.—*Olla Podrida*, i. 307.

A CAVALIER'S NOTE-BOOK:

CONTINUED BY HIS SON.

WITH NOTES BY THE LATE ROBERT DYMOND, F.S.A.

BY FRANCES B. TROUP.

(Read at Tavistock, August, 1889.)

A SMALL, antique note-book, which belonged to the late Mr. Robert Dymond, F.S.A., has been placed in my hands by Mrs. Dymond, with a request that I would prepare a paper for the Devonshire Association concerning it, making use of the notes he had made on the subject, and adding such other information as I have been able to obtain. Mr. Dymond having at one time lent me this quaint old manuscript, we had some conversation and correspondence about it. I consider it a great privilege that I have been asked to undertake this pleasant task, and I sincerely trust that I may be able to do it some degree of justice.

Mr. Dymond noted that this manuscript memorandum or account-book came into his possession in April, 1884, and was, he believed, identical with one of the books advertized for by the late Mr. Richard Sainthill, the numismatist and archæologist, in an Exeter paper in the year 1868, when a reward of two guineas was offered for it. But Mr. Sainthill died some time before the book came into Mr. Dymond's possession.

The book itself measures $5\frac{1}{2} \times 4$ inches, and has a limp parchment cover, tied with leather strings. It consists of some 150 paper leaves, which, with the exception of five or six, are closely written over, the book having been turned upside down and rightside up more than once; so that at times the accounts run into each other in a rather confusing way.

The handwriting in it is evidently that of two different persons, internal evidence proving these to be Peter Sainthill, of Bradninch, and his son Samuel. The earliest entry bears date 24th July, 1644; the latest, 25th June, 1670, thus extending over a period of more than a quarter of a century.

Five pages are written by Peter Sainthill, apparently at one time; then follow five more pages, evidently in his handwriting also, but written at a subsequent date, or more hurriedly. These pages contain "A note of my estate," and "Debts owing to me."

The rest of the volume is filled with receipts, disbursements, and a few random items written by Samuel Sainthill. The earliest of these is dated 24th June, 1649, possibly soon after he obtained possession of the book; for his father had died the August previous at Leghorn.

It seems possible that from this "Note of my estate" was drawn up "A particular of the State of Peter S^r Hill of Bradninch in the county of Devon," which we are informed by Mr. Richard Sainthill, in his book entitled *Olla Podrida* (vol. i. p. 313), is in the State Paper Office in London, and was made out in connection with Peter Sainthill's petition "for composition for his delinquency." He was a faithful adherent of King Charles I. The "particular" (copied at length elsewhere) is, we are told, in Peter Sainthill's own handwriting, with the exception of his agent's signature. The entries in the manuscript note-book concerning the Cavalier's estate and debts are as follows:

A Note of my estate, taken 24th July, 1564—

Mr Evans of ffountayes Abbey in Yorkesheire holds of mee the Moety of the Lordshippe of Attley, Couton,¹ Southcotton and other Lande and Tythes there for w^{ch} hee is to pay mee yearly for the same the some : 175^l. 05^s. 08^d.² In August next ensunige he owes mee full two yeares Rent, And hee also owes mee about Thirtie ffeve pounds for the Third yeare past. he is to pay the above menconed Rent cleare Ultra Reprisas.

The said Mr. Evans hath a terme in the p^rmisses for about ffowerteene yeares to come: And the last yeare of the terme hee is to pay two yeares Rent, by reason hee was spared the first yeare when hee tooke the Lease of S^r John Hele for Twentie one yeares.

¹ Coverton in the "Particular." Cowton in Mr. Samuel St. Hill's accounts and at present date. There are now North, South, and East Cowton, the last being the largest, a parish of 380 inhabitants.

² In the "Particular of the State of Peter S^r Hill," among the papers in the State Paper Office, this estate is valued at £140.

The Articles whereby Mr Evans holdes the same are in my custodie, but all the Evidences of the Land are lefte in my brothers³ custodie in London.

It was agreed betweene my brother & my selfe that the within menconed Evidences should be kept in some Hall in London amongst such other writinge there for o^r use upon all occasions: & safely to be preserved.

An inheritance of my Lande and Tythes in Yorkesheire was made unto Mr. Thomas Jenninge and Mr. John Martyn⁴ for mee & my heires.

Mr. James Armeston holdes of mee certayne grounds in Warwick sheire called Shold⁵ feilds contayeninge 160. Acres or there abouts for one yeare to end att o^r Lady day next for w^{ch} hee is to pay me fiftie pounds; hee is to pay all Rates & taxes out of it.

Mr. Ezechias Scarninge holdes there of mee one feild called the Stripe⁶ contayning 30 Acres for w^{ch} hee is to pay mee Twelve pounds per ann beyond all taxes.

The above menconed pcells of Lande I hold of S^r Jo: Hele for 99 yeares if my sonnes Samuell, Peter⁷ & my daughter Grace⁷ or any of them soe longe live, & I am to pay: 12^l yearly for the same unto S^r Jo: Hele and his heirs.

The grounde w^{ch} Mr. Armeston holds of mee hee formly pd me for the same 73^l yearly beyond all taxes, but since the tymes grew bad hee pd lesse.

I hold Kentisham Mills⁸ in Bradnynch of the Prince and on one Coppy I have my wifes life,⁹ & my daughter Hancockes¹ and on another Coppy my sonne Samuell, & daughter Grace. The yearly Rent due to the Prince for the same is about six pounds.²

³ Probably his brother Robert, Agent to the Grand Duke of Tuscany. He held this position as early as 1643, and perhaps in 1635 also. He "advanced 2000^l to the late king to bring his army out of Cornwall." (See *State Papers Domestic*, 1662.)

⁴ Probably his own cousin, son of Henry Martin, of Steeple Morden, Cambridgeshire, mentioned among "bonds for others" as my cousin, John Martyn.

⁵ Scolfeild in the "Particular."

⁶ Strepp in the "Particular." These two are valued at £60 p. annum, charged with £12 rent held on two lives.

⁷ Believed to have died soon after 1644. Neither mentioned in Samuel's accounts.

⁸ Keinsham Milles in the "Particular," on the lives of his wife "Mary, his daughter, and Samuel his son" ("Mary his daughter" it should be). Value of estate, *ultra reprises*, £110 per annum.

⁹ His wife Dorothy, died 1663.

¹ His daughter Mary mar. John Hancock, of Combe Martin. See Pedigree.

² These mills called Kensham Mills, had been held by the grandfather of the Cavalier as early as 1564, on the lives of Peter and Mary Sainthill, his son and daughter, and Richard Sainthill. Peter Sainthill, father of the Cavalier, held them in 1590, and added the lives of Elizabeth Sainthill (his wife), Barbara Sainthill, and Julian Denner. The mills appear to have been held by Richard Sainthill, of Rockbeare, in 1625. Samuel Sainthill mentions payments of rent for these mills in his accounts from 1658 to 1667.

I have the ffishinge in Bradnynch for my wifes life and daughter Hancockes, & am to pay fower shillings yearlye Rent for the same.

I have five acres in Longe meadow there by sevall Coppies but my brother Robert is to have one of them duringe his life, the Reversion thereof I have, but what lifes there are in the same I referr that to the Coppies themselves now in my Custodia.

I have a Lease in the p'sonage³ of Bradnynch for 18 yeares to come at o^r Lady day last past payinge 53¹ yearlye for the same and mayntayning the Curatt.

The following entries are in the same handwriting, but of a different date, with different ink.

Bradnynch. Acars in long meadowe

Alexand^r Giles⁴ clearke holdeth the 8th and 9th acars in long meadowe for his life, the rev'con of both being graunted to Samuell my sonne & Grace my daughter for their lives per cop' dat. 17 decem 4^o Car. R.⁵

I hold the 4th acar in long meadowe for my life, the rev'con thereof is graunted to Samuell & Peter my sonnes for their lives per copia dat 14 decembris a^o 7 Car R.⁶

I hold another acar ther for my life being the 7th acar and the rev'con thereof is graunted to Samuell my sonn for his life by cotype dat. 4 Aprill 8 Caroli.⁷

My brother Robert Sainthill holdeth the thorne acar ther and I have the rev'con for my life by the same copy. & whiche one of my children be not after thereon.

I have in Rockbeare the fee simple of the Rectory and Tythes of the said pish.⁸

I have alsoe the Inheritance of two Tenem^{ts} in Southwood⁹ there now in the possession of Tho: Bishopp.¹

³ In the "Particular" mentioned as the Rectory, held of the "Deane & Canons of Windsore" for 15 years. A charge of £15 for vicarage and £40 for curate leaving £167 per annum clear. According to these two entries, this lease would expire on Lady-day, 1661. Another entry further on, by Samuel, values it at £160 per annum for 18 years from 1649, "when the sequestration was taken off." Samuel also enters payment of rent for it (Nov. 24th, 1664), for a year to Michaelmas last, amounting to £53 00s. 08½d.

Oliver, in *Eccles. Antiq.* (i. 16), under Bradninch, mentions the Sainthill family as impropriators of all tithes and glebe lands of the parish under the Dean and Canons of Windsor since the time of Edward VI. They are bound to provide a curate and to repair the chancel, and have the privilege of appointing one of the churchwardens.

⁴ I can find no mention of Alex. Giles in connection with Bradninch.

⁵ 1628.

⁶ 1631.

⁷ 1632.

⁸ June 25-26, 1812. Jane Sainthill, being seized of the manor of Rockbeare, contracted with Thomas Porter for absolute sale to him of reversion in fee simple expectant on decease of Jane Sainthill for £3,900.

⁹ Southwood farm, belonging to Rockbeare Manor House.

¹ Thomas Bishopp, buried at Rockbeare 1st October, 1645.

Alsoe I have the Inheritance of Two Tenem^{ts} now in the possession of the widowe Barons.²

Also of some grounde in goteley^s wood now in the possession of Thomas Wilde,⁴ but what estates they have therein, I reffer myselfe to the Leases and Coppyes.

I have divers high Rents belonge to the Mannor of Rockbeere w^{ch} will appeare by the Rentall thereof.

[Added in Samuel Sainthill's handwriting.]

M^d I finde y^t my father set the moore and 3 closes for 3 yeares frō Chrmas 1638 for 15^l per ann.

The 3^l rent pay^d out of Rockbeare is payable for tenths out of the tyth and not frō the tenen^{ts} there.

The bowling donne set at 3^l 10^s per ann.

Oxenford meadowe 10^l

24^o July 1644. Debts owinge unto me—

My brother Robert oweth mee w th out specialty w ^{ch} was taken in upon his Stocke, for w ^{ch} hee payes me 7 ^l per Cent	£	s.	d.
	200	00	00
Alsoe hee owes mee on specialty w ^{ch} hee had of mee at his last beinge in the Country	100	00	00
more hee oweth mee the p ^d uce of 40 peices of fine white serges sent beyōnd the seas about Candlemas last was Twelve monethes			
Alsoe hee oweth mee by acc ^o und ^r his owne hand sent mee att his last goeing out of England	074	18	04

[Written in later handwriting.]

more I have payed at michas 1643 the some of 202^l to the Lady Vincent⁵ for a debt of my brother Robert 202

more I have payed for another debt of my brother Robert to Henry Ayshford esq^r in November 3. 1643. the some of 200 00 00

w^{ch} two last somēs wth some other monyes w^{ch} I have lent my brother as M^r Strode and M^r Knowles my brothers agents and my serv^t John Prowse doe knowe are reduced into one

² Margaret Baron, widow, died at Rockbeare 20th February, 1656-7.

³ Now called Cotley Wood.

⁴ Thomas Wilde, married at Rockbeare December 29th, 1646, to Dorothy Lee.

⁵ 1617, March 29th, Francis Vincent, of Stokendabernon, in co. Surrey, Knight, married Elinor Acland, widow, late wife of Arthur Ackland, Knight, of Kellerton, in co. Devon.

bill of 300^l w^{ch} I have und^r the hands of the said W^m Strode and W^m Knowles for the sayd mony, and unto another debt on the book for 109^l 13^s 08^d w^{ch} is und^r John Prowse his hand but the tymes when I lent the sayd monyes for my brothers occasion is as is hereafter expressed.

Also I have payd to Mr Ayshford 1-12-06^d for my brother he taking no ap— but that som for my brother.

Also I have payd to Mr Richard Culme⁶ of Cannonleighe for my brothers debt the some of 100^l principall mony and have taken up his bond 100 00 00

For the interest or p^rfitt of the sayd somes by merchandizing upon good assurance or otherwise I leave the same to the care of my dease brother desiring him to pay 500^l of that some to M^r John Laurence⁷ an apothecary in london for w^{ch} my brother doth stand engaged and

I doe owe 50^l to one Turner in london w^{ch} was but 46^l or thereabouts, and thereof I have payd 40^s to Johas Kendall and 50^l more is in Mrs Prouse her hands on two bonds.

Touching my sonne Hancock⁸ I agreed to pay him 250^l, and to bestowe some plat on him w^{ch} I did intend should be 50^l in value when he should come to full age: nowe I have already fully payd the same somes as appears by his notes and my accomptes.

Also my sonne Hancock and I did adventure 300^l in the purchase of the Irish land⁹ according to the proposi^cons made by the king and the p^rliamt, the whol some I did disburse, I doe desire that my sonne will pay his sister Anne¹ that some when he is of age wth the interest after the rate of 7^l per cent synce the mony was layd out, and the rest that shall be due to her by vertue of the articles on the marriage wth my daughter Mary shall be payed by my executors when the ioynture shall be made good to my daughter as was agreed upon; and the other p^rticulars settled that my sonne Samuell may enioy my daughter Maryes life in Kensham

⁶ Son of Hugh Culme, of Molland. He was living in 1620. (See *Heralds' Visitation of Devonshire*, 1620.)

⁷ In the "Particular" Mr. John Laurence, in Cheapesyde, principall money 500^l. Mr. John Laurence, of Colesbury, security for Sam^l Sainthill, 29th September, 1651.

⁸ John Hancock, of Combemartin, who was not of age at the time of his marriage with Mary Sainthill.

⁹ Subscriptions for Irish land were made between 1642-1646. The list given in *Notes and Gleanings* for August, 1888 (p. 26), contains the name of Peter St. Hill, £300, but not that of any Hancock.

¹ Mrs. Ann Hancocke, mentioned in the "Particular," principall debt £500, sister of John Hancock, married Rev. George Cary, D.D., Dean of Exeter.

Milles and the ground belonging thereunto according to the marriage of my sayd daughter Mary.²

[In Peter Sainthill's second style of writing.]

My engagements ffor others

I am bound in a bond of great some for the paynt of 500^l to John Were³ of Silferton Esq^{re} and in another bond to him for 300^l in both bonds others are bound wth me: and the same weare taken up for the paym^t of the Armye: and the mony was owing by Mr Were to Mr Gould deceased, who being indicted and convict of treason the mony is the kings, and so the bonds ought to be yeilded up, the king giving M^r Were some discharge or g^{rt} of his land w^{ch} Mr Were assigned to Mr Gould for security of his mony, and there is 270^l or thereabouts more due to the king.

Also I am bound wth others to Mr maior of Exet^r and Mr Robt Walker for 200^l payable about Xpmasse last and the same is for publick occasions of the armye.

Other bonds I have also entred into wth others for amunicion the pticulars whereof I canot exepresse.

Mr. Acland Mr Giffird of Wrightly Mr Abnett (?) and myselfe ar also bound to Mr Nic. Dale for 100^l wch was delivr'd to Mr Acland for the garrison of Colombjohn.⁴

I am also bounde to Moses Goodyear⁵ of Plimoth for 200^l as surity for Richard Galhampton and Mr Osborn of Newton Ferrys half a morgage for the say^d Richard Galhampton for my discharg

I am also bound to Mrs. Wescott of Shobbrook for 100^l, being the debt of my cousin John Martyn.

I am also bounde in london to Mr Colwall and some others by his p^curem^t for generall debts of S^r Peter Balle, w^{ch} I knowe not whith^r they are discharged or not

And I am also bounde for the sayd S^r Peter Balle to Mr George Kendall of Exet^r for 200^l

I am also bound for my broth^r Robert S^thill to M^r Culm for 100^l and to Mr Doctor Hall for 300^l

² In the beginning of the account-book has been written by Samuel Sainthill, but erased, "Though Mrs. H. hath beene of age these 3 yeares yet she can not demand interest for her money because the 500^l is not due till my brother hath settled a ioynture on my sister, and the pay^t of settlement of the ioynture is depending on to the paym^t of that summe as may appear by the articles."

³ John Were, of Silferton, signed statement about Peter Sainthill's residence in Exeter prior to the siege, dated 5th August, 1646.

⁴ "At one period during the Civil War (June, 1643), his [Sir John Acland's] house at Columb John, which he had fortified for the King, was the only spot in Devonshire not occupied by the Parliamentary forces." (*Olla Podrida*, i. 343; see also *Clarendon*, vol. iii. book vi., page 281.)

⁵ Moses Goodyear, merchant, of Plymouth, was connected with Trelawney in his grant of land in New England.

Also I stand bounde to severall psons in great sōms for S^r John Hele, many of w^{ch} debts ar mencond in schedules annexed to some deeds made over to me and other for my indemnity, but others ar not mencond ; of w^{ch} some are

to M ^r Doctor Osborn for	100 ^l
to Mr ffalhed for	100 ^l
to Mr Nape of Oxford or his servt Gill for	100 ^l
to another ther for	050 ^l
to my Cousin Ayshford for	100 ^l
to S ^r Robert Pye or M ^r Speke for	1000 ^l
to M ^r Jennings of london for	2000 ^l or 2500 ^l
to Mr Norrys Griffith for	400 ^l
to M ^{rs} Samford for	300 ^l

[The following is in Samuel Sainthill's writing.]

Assets	A Lease of the Rectory of Bradninch at 160 ^l per an:
	for 13 yeares from 1649, when the sequestration was taken
320.	of To be charged but w th two yeares profits of the whole
	and 11 yeares of the tyth w th out the glebe w ^{ch} was pur-
100:	chased in 1651. The Tythe to be valued at 100 ^l per an
45	the glebe at 60 ^l
55.	Deduct out of the tythe 31 ^l high rent and 14 ^l to the curate
	A Lease of 11 yeares in 55 ^l per an may be valued at —

In Sainthill's *Olla Podrida* (i. 298-9) is printed the following sketch of the Cavalier, which was found among other MSS. at Bradninch House :

"Peter Sainthill was born 1593, and was educated at the Free Grammar School at Tiverton, and one of the first scholars in that foundation. He was an accomplished gentleman, and a good scholar ; of a courteous and affable disposition ; charitable, and of such unaffected simplicity of manners, that he secured the esteem of all, and gained universal confidence by his integrity, both in public and private life. He was a pattern of loyalty and attachment to his king, and being possessed of large property, he lent liberally to supply the royal necessities during the arduous contest between Charles and the Parliament ; and when the king headed his army in the West, and the troops were marching from Honiton to Tiverton, in the year 1644, he entertained his sovereign at Bradninch House⁶ a day and a night, and the following morning attended him on his route to Exeter. He was Recorder of this borough, and Deputy-Steward of this manor ; and in the years

⁶ From Richard Symon's *Diary*, p. 39, 1644 : "This Satterday, 27 July, his Majestie went to see Prince Maurice his army, seven myles nearer Plymouth. His troope mett him on the way as he came back, and wayted on him to his quarters at Mr. St. Hill's house, justice of the peace at Brodnedge [Bradninch], a Mayor towne, though almost all the houses be clay without any timber in the wall, except the doores, rooffe, and windowes, which is the fashion of the country."

1640 and 1641 was elected member of Parliament (together with Sir Peter Balle, his kinsman) for the borough of Tiverton, which he continued to represent till the memorable year 1646, when, to avoid the persecution of his enemies, and save his life, he sought an asylum in Italy.

"On entering Parliament Mr. Sainthill inclined to the popular side; but as soon as an ordinance was passed for raising an army against the Crown, and abolishing episcopacy, he threw all his interest in the support of the king, and was one of the 118 members that sat in the Parliament of Oxford, convened by Charles in January, 1643; and, in conjunction with the Lords and other Commoners, he signed the letter to the Earl of Essex on the 27th of that month; and in consequence the Parliament in their propositions for peace to Charles, November 23rd, 1644, require that Peter Sainthill, Esq. (among other) be removed from Court and his Majesty's Councils, be rendered incapable of ever holding office, and that one full-third part upon full value of his estates be employed for the payment of the public debts. Mr. Sainthill also commanded the trained bands raised under a Commission from the king at Bradninch, and was one of the Commissioners 'for managing the king's affairs in the West.' (He is mentioned by Clarendon, ii. 639, as one of the Commissioners who met the Prince of Wales at Bridgewater, April 23rd, 1645, to consult on the best steps to be taken for the king's service)."

The entries in the MS. note-book which were made by Samuel Sainthill, are chiefly receipts for rent, payments made for himself, his brother Robert, his sisters, his nieces and his nephews, as well as notes of various debts incurred. From these may be gleaned many items interesting to the general public, as well as matters concerning family history valuable to the genealogist. Some of these enable us to add to, others to correct, the pedigrees of the Sainthill family which have already been published. The more interesting entries are given below:

ENTRIES OF ACCOUNTS, ETC., IN SAMUEL SAINTHILL'S
WRITING.

1649.

June 24. Recd. of Martin Dunsford for a bushell of pipins	00	02	00
of Chr: Miller for a hogshead sider	00	12	00
of John Acland for 1 sack and 2 pecks of pipins [This J. Acland appears by other entries to have been a labourer.—R. D.]	00	08	00
for a hogshead of sider sent to Tiverton .	00	13	00
of Chr. Flower for 3 bushells wheate . . .	00	16	06

1657.

No: 1. Pd at . Fauks hall . . . 00 05 00

1658.

June 1. Rec^d of him [Mr. Anderson, whose name occurs often.—R. D.] by his brother Stephen when Ed Yard came to towne about June 2 [See pedigree.—R. D.]
 [Most of the receipts are for rents and tithes.—R. D.] . . . 05 00 00

July 19. Rec^d then of H. May for the waterleate from Lammass to Roodmas last [Rent of water leat mentioned several times.—F. B. T.] . . . 03 05 00

Oct. 5. Rec^d of my cousin Churchill for rent at Rockbeare to the 29th of Sept. 1657.

1657.

July 4. I came home.
 Sent to Exeter for wine and sugar . . . 00 16 06
 At Treasbeare⁷ to L. Paddon . . . 00 00 06
 for a payre of shoes . . . 00 04 06
 At the bowling greene . . . 00 08 06
 To my sister July 13 when she went to Combmartin . . . 00 10 00
 [His sister Mary married John Hancock, of Combmartin.—F. B. T.]
 At the greene . . . 00 02 06

July 18. To Rich Rose for rabets . . . 00 01 00

July 20. For things for my mother [Then living.—R. D. Died 1663; see ped.—F. B. T.] . . . 00 01 00
 Pd Will Wright July 24 for a tax towards the repaying the wayes . . . 00 13 04

July 26. To my sister for 2 turtles [Doves?—R. D.] . . . 00 02 00

Aug. 3. To my sister to buy me shirts, &c. . . 1 15 00
 To John Hill for 2. 6 moneths rates for the poore from Aprill 17th last at 2^s 8^d p[ners?] . . . 1 12 00

Aug. 10. To a messinger to my brother Hancock [See pedigree] . . . 00 05 00

Aug. 12. To the plumber Can for coming over . . . 00 04 00

Aug. 17. My expences from Brad:[ninch] to London . . . 1 04 03
 My horses meat . . . 00 11 10
 To serv^{ts} by the way . . . 00 02 08
 for a crupper, &c. . . 00 00 09
 For my little nag . . . 02 00 00

⁷ Residence of his sister Dorothy, who married Thomas Yard, of Treasbeare. See pedigree.—F. B. T.

Aug. 24.	My expences from London to Broughton 3 nights	00	13	10
Sept. 8.	Extra at N. Cowton	00	00	09
11.	To the threshers to drink	00	00	06
	My journey from old cotes to London	02	10	00
Oct. 14.	Laundresse	00	01	02
15.	for a ink horne	00	00	09
20.	Earnest for my chamber in the Strand	00	02	00
22.	To Mr. Brock to buy 6 elles of Holland for 2 shirts	01	01	00
Nov. 6.	To the Laundresse for a fortnight at 4 ^d bands and cuffs and 3 ^d a shirt 1 ^d p sockes &c.	00	03	06
Nov. 24.	for Riverius observations [A book?—R. D.]	00	02	06
	For a copy of the Irish bills	00	01	00
28.	To Sig ^r Torriano for his booke [Teacher of guitar?—F. B. T.]	00	01	00
20.	To Mr. Ludbrooke for. two bills of my blacke suite and cloake and my color'd suite trim'd w th scarlet ribans	08	00	00
Dec. 1.	For mending my gittar	00	05	00
2.	To Mr. Comer for strings in exchange of my gittar	00	11	06
Dec. 21.	At Ottery to my sister's man	00	01	00
Jan. 7.	To my sister at Ottery for lace more then for lace	00	18	00
8.	To my C. G. Sainthill as by bill	00	12	00
20.	For charcoles halfe a peck	00	00	06
22.	To Mr. Trosse for the attachem ^t	00	16	00
Feb.	My expences to London	01	08	06
20.	for a loyne of veale w th Mr. Norton at the lamb	00	07	00
Mar. 1.	For my uncle Veysey's will [See pedigree]	00	02	00
4.	To S ^r P. Ball for advise concerning my uncle Veisey's will	01	00	00

1658.

Apr. 10.	My expences from Bradninch to Cowton 7 dayes w th my man	3	7	0
	Expences in my iourney to London	2	8	0
Apr. 27.	My expences since I came to London frō Tewesday to friday	01	00	00
May 12.	To S ^r Pet ^r Ball to attend y ^e 6 clarkes concerning the irregularity of the execution of o ^r com ^a	01	00	00
15.	To S ^r Peter againe to attend the six clarkes	01	00	00

25.	To S ^r P. Ball to defend a motion ag st the six clarkes certificate	01	00	00
	To the Attorney generall then	01	00	00
June 1.	By water to Greenw: ^{ich}] [Frequent pay- ments for going by water]	00	02	00
8.	for a bridge to my gittar &c.	00	02	00
	scouring my sute	00	01	00
23.	at Wimbleton	00	01	06
27.	for the Act concerning Recusants	00	00	06
	My expences from London home	1	15	00
July 26.	To my sister for M ^r Nich ^{as} of Exeter the glover	05	00	00
Sept. 1.	At Ottery and Clisthydon	0	1	00
Oct. 9.	To Burnard for 1000 of shindle stones	00	16	00
	Expences from Bradninch to London w th my C. Betty	01	12	06
30.	for a p kids leather gloves	00	01	06
Nov. 9.	For Burtons <i>Comment on Antonin: Itinerary</i>	00	05	06
	For the <i>Catalogue of the nobility</i>	00	02	00
	For Cavanza's <i>Counicills</i>	00	04	00
	For the <i>Way to blisse</i>	00	02	00
	For the <i>Append: to Pharmac: Auguston</i>	00	02	00
	[There are frequent entries for purchase of books.—R. D.]			
11.	for 3 y ^{ds} Bermillion (?)	00	06	00
	For 4 y ^{ds} wosted camlot	00	15	00
24.	Expences from London to Cowton 8 dayes expences there ten dayes	2	15	00
	expences from thence to London	2	15	00
	At Huntingdon for a horse and expences there	00	16	00
Nov. 22.	Then to M ^r Ludbrooke for all acct but the twisting my sute w th scarlet riban [Mr. Ludbrooke appears to have been his tailor.—R. D.]	6	00	00
27.	At cards at M ^{rs} Garways	00	02	06
Jan. 3.	for books as by my C. Bury's catalogue [His aunt Julian married Peter Burye, according to <i>Her. Visit. of Devon</i> , 1620. —F. B. T.]	01	05	06
10.	for the Queen's closet	00	02	00
18.	for Dr. Heilins animadversions [a book ?].	00	03	06
31.	To my C Sky for 12 bottles of wine fetch't by M ^r Colby	01	02	00
Feb. 25.	To Mr Locksmith for 2 pound conserve roses	00	05	04

1659.

May 6. For carriage of my box and hat case
weighing 52 pound 00 06 06

1649.

To my mother June 23 to pay for hewing
of furse 00 10 00
M^d my mother came to Bradninch July
30. 1658.

1659.

June 12. To a poore minister 00 01 00
17. To my C. G. St Hill as by bill 02 03 00
[The entries "at the greene" almost daily,
2s. 6d. to 8s. 6d.—R. D.]
July 8. To my sister for trapping for her horse . . 01 01 00
For Hansel for M^r Potter 00 08 00
14. For a p of gloves for Judith [Hancock.—
F. B. T.] 00 00 10
19. To Peter Salter for to buy mazards 00 03 00
27. At M^r Potters at the Christenings to the
servts. . . . 00 03 06
Aug. 1. To Will Denner for brining peares from
Cousin Underwood 00 01 00
Sept. 21. To my sister for a greate Skarfe 01 01 00
28. At Charmouth and at Honiton 00 08 08
To my sister w^{ch} she had of bes Long
when she went to M^r Maior's Christing 00 02 06
Oct. 3. To the Collompton Taylor for my sister's
bodies 00 10 07
10. To my sister to buy hansell for my god-
sonne Bury 01 05 00
Dec. 2. To Maior Serle for 2.3^{ds} of a horse for my
selfe and my mother 06 06 08
29. For 6 4th of french wine from Cullumpton . . 00 05 00
Jan. 2. To Mr. Pinson for a Sunday's serving the
cure 00 10 00
Jan. 9. Expenses at Exeter at the meeting [Was
this the meeting in Exeter about the Free
Parliament, in 1659, when the "Justices
and principal gentlemen of the county
of Devon were assembled in the Castle"?
(See Jenkins' *Hist. of Exeter*, pp. 166-7;
and Izacke's *Memorials of Exeter*, 164-5.)
—F. B. T.] 02 00 00
14. For buttons for hand kercheifs
16. At my C: Taylors 00 01 06

27.	To my C: Foxwell for 6 yards $\frac{1}{2}$ camlote at 6 ^s	01	01	06
Feb. 2.	To my C: Hewes	00	04	00
	To the fidlers there	00	03	00
Mar. 9.	To M ^{rs} Vaughans man y ^t brought Tobacco pipes	00	01	00
16.	For 6 earthen bodies	00	02	00

1660.

Mar. 26.	At Winslade	00	01	06
Apr. 4.	At the greene w th my C: Martin and S. Crimes [Cousin Martin. See pedigree.— F. B. T.]	00	10	00
Apr. 10.	To M ^r More at Exeter for Sundayes serv- ing the cure	01	00	00
21.	To my sister when she went to M ^r Kirk- ham's	03	00	00
May 3.	My journey to London	01	08	00
11.	For riding my horse into Smithfeild	00	01	00
	For Basil Valent[ine's] triumphant chariot	00	01	00
May 31.	For a p of thread and cotton stirrup stockins	00	07	00
June 2.	" " " styrrup stockens	00	07	00
16.	For a ring for S. P. Ball	02	00	00
26.	For a p pearle collord silke stockins	00	18	00
	[Several entries for articles of personal adornment. Were these purchased in honour of the King's Restoration?— F. B. T.]			
July 5.	To my C: S th ill Bury money disburst by him to Ed: Yard [St. Hill Bury, son of John Bury; his will is dated 1st August, 1661]	00	10	00
	To him more for oranges and lemmons sent into the country	00	08	00
Aug. 8.	To my sister when she went w th my br: Hancockes corps p ^d on severall times	00	10	00

1662.

May 23.	To S ^r Peter Ball for his advise touching my father's will	01	00	00
24.	For 3 p shamoy sockes and one p stirrup stockins	00	03	06
	To M ^r Budgell in p ^t for solisciting the confirmation of my estate in the milles	01	10	00
Aug. 23.	To my C: Peter Churchill for procuring me 30 ^l	01	00	00
	[Workmen's wages and carriage.]			

Harvest, 1658.

July.	To Will Hutchens for a dayes worke w th two horses	0	3	0
Aug. 7.	To Rob. Salter for mowing my barly in the hill parke	0	03	00
	To Hanibull for binding the barly there and helping to carry it in	00	02	06
Sept. 6.	To Aplin Mellish his daughte for picking elder berries	00	01	00
[In May and June, 1663, he appears to have been engaged in law proceedings in London.—R. D.]				

1663.

May 25.	To S ^r Peter Ball to move	01	00	00
June 3.	To Mr. Longley in Pepper's business to arrest his ten ^t some side (?) in pur- suance of the order in Chancery, for tythes 1657-58-59	01	00	00
Nov. 2.	To the taylor for 6 yards riban	00	01	09
	For twisting my breeches	00	00	10
Dec. 4.	For 3 garnishes of buttons	00	02	00
	For 1 y ^d ½ ferret riban	00	01	09
23.	To M ^r Serle of a pr of galoshes	00	03	06
Jan. 27.	For ¼ l of china [Tea?—F. B. T.] . . .	00	04	06

1664.

June 1.	To Mr. Serle for a p of black spanish lether shoos	00	05	00
July 17.	For a clocke	02	15	00
Aug. 6.	To Mr. Pits Taylor in full for clothes made for my br: funerall	06	15	00
Aug. 20.	To Mr. G. S ^t Hill ^s	06	00	00

^s William St. Hill = Maria, dau. of John
of Heniock, clerk. Pinsent, of Bovey
mar. lic. April 5, 1581. Tracey.

Walter = Elizabeth Jourden.
notary public. *mar. lic.* March 30, 1625.
bapt. May 10, 1597. Living 1666.
d. May 19, 1645.

George, "pharmacop."
b. , 1627. *d.* May 18, 1666.

[This George was buried in Exeter Cathedral.
He seems to have been the same George
mentioned frequently by Samuel Sainthill as
an apothecary.]

Oct. 8.	For a p of gambadoes [Cases of leather to protect shoes and stockings from the dirt when on horseback ; see Halliwell's <i>Dictionary</i>]	00	12	00
	To Mr. Crimes for the administration of my br: Robt: goods	06	17	06
Nov. 5.	I came to London.			
11.	To Mr. Walden when arrested by ser: at: armes for his assistance [Mr. Walden seems to have been his solicitor]	00	10	00
	To Mr. Baker the serieants messenger	00	10	00
	To S ^r Peter Ball in y ^t business	1	00	00
14.	For making affidavit 1 ^s for a copy on't attested by the register 2 ^s . For coppies of 2 orders 3 ^s for the registers hand to them 2 ^s .			
15.	To Mr. Walden for the Clearkes of the petitions to get my petition witness'd	0	12	06
18.	To Mr. Baker by S ^r : of armes his order	10	00	00
	To Mr. Walden for his assistance	00	10	00
	To his man at twice	00	02	00
21.	To Mr. Buckley for a demicaster	01	03	00
	To him for a felt	00	11	00
22.	For a print of Piazza Navona 1 ^s for a merry print 1 ^s 6.	00	02	06
	For 2 little bookes of habits of men and women	00	01	00
23.	For 7 y ^{ds} camlot at 7 ^s 6 ^d for a cloake	02	12	06

1664.

Nov. 24.	For 2 aq: vitae tumblers 5 ^s for a cane 4 ^s for a standish 2 ^s	00	11	00
	For 2 wastcoates of Barmilior [Bermillion?]	00	17	00
Mar. 14.	For an imbost cup for hansel for M ^{rs} Potter [Embossed cup ; see Halliwell's <i>Dictionary</i> .—F. B. T.]	01	13	00
	For a port mantle and a p of straps	01	11	00
	For the Act for the royall ayd [? In connection with King's declaration against the States of the United Provinces or against the French King]	00	03	00

1665.

Mar. 25.	To my Cousin Sthill apothecory in full of all acct.	01	05	11
27.	To the bayly that arrested me frō Ben. Beard.	00	02	06

Apr. 20.	To my C. G. Sthill for letting Margarets blood and giving J. Linsey a vomit [Both servants of his.—F. B. T.]	00	06	06
Sept. 7.	To my Cous: Leigh by mysister Yard's order	1	10	00
Dec. 2.	To my Cousin Amy Yard more for Interest of 300 ^l due to my sister Yard [No mention of the fire that destroyed nearly all of Bradninch in 1665.—F. B. T.]	7	00	00

1666.

June 25.	Remitted my Co: Ro: S ^h ill to pay for 2 pictures of the K. and Q. costing 1 ^l 2 ^s .	1	10	00
Aug. 19.	To Jud: Hancock a token for her br: Sam: [Can find no other mention of Samuel Hancock. John Hancock in his will mentions a son Edward, who is not referred to in this MS. book.—F. B. T.]	0	05	00

1667.

Dec. 27.	To Mr Arden of Exeter for peice of hangings 24 yards for green chamber	4	15	00
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1668.

April 2.	To my Cou: S ^h ill in full of all acct to her selfe and sonne My sisters acc ^t since Octobr. 1 st 1660 that she left me.	3	00	00
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1663.

Nov. 12.	To br: Rob: by H. Bowdon	00	10	00
Dec. 4.	For 3 y ^d $\frac{1}{2}$ holland for a half shirt for br: Rob.	00	09	04
Feb. 4.	To him (Mr Foxwell) by Channon the taylor in 50 reed knitches at 8 ^s and 7 ^s in money	00	15	00

[The following entries are connected with his brother Robert's illness and death.—F. B. T.]

1664.

Apr. 25.	To Mr G. S ^h ill for Physick	00	11	00
	To him for the Dr Bidgood	00	10	00
	To him for 2 nights and 1 day	01	00	00
May 4.	To Dr Bidgood for him by G. S ^h ill	00	10	00
5.	To G. S ^h ill for coming hither	00	07	00
	To Alce Mellish for 7 nights watching w th him	00	02	06
9.	To Rob: Arundell for oranges for him	00	01	06
10.	To Dr Acland	01	00	00
12.	To G. S ^h ill 2 dayes being w th him	01	00	00

14.	To Joan Ellis for a fortnights attendance .	00	05	00
	To C. G. S ^h ill a night and a day and giving glysters	0	10	
	To him by Margaret to Blanch 2 ^s and 2 ^s 6.			
	to J Chown	00	04	00
20.	To G. S ^h ill	00	10	00
	To Th: Sander for ringing the bell	00	02	00
	To him for making the grave	00	02	06
	To him for ringing a peale after the funerall	00	02	06
23.	For 10 p womens kids leather gloves . . .	01	00	00
	19 p of mens kid	01	18	00
	1 doz of lamb	00	12	00
29.	To Alse Mellish for tending br: Rob: about a fortnight	00	06	00
	To J. Chanon in p ^b of a debt of br. Rob.	01	05	00
	To him for watching w th him	00	02	00
31.	To J. Acland for his coffin	00	10	00
	To Margaret for things fetch't at Stretchly for br Rob	00	04	04
Aug. 18.	To Mr Hornebrook for escutcheons for br. Rob.	01	08	00
	To Warren at the mirmaid	01	07	00
[Then follow legal expenses.]				
Sept. 21.	To Mr. Somson my Com ^r for 1 days attendance there	01	00	00
Nov. 25.	To Mr Walden for an order by motion to adde an interrogatory to prove a copy of the fine set at Haberdashers Hall and to prove the tresorers receite [See docu- ment concerning setting of fine and the Treasurer's receipt.—F. B. T.]	00	10	00
[Several entries to the examiner and about examinations.]				

1664.

For the M ^r of the office S ^r Ni Strodes hand to the certificate endorsed upon my receites of composition money				
	P ^d for a dinner at the red cow for witnesses	00	05	00
	P ^d Mr Royly for coppies of the particular and setting the fine and an order	00	15	00
		00	10	00
[A number of payments for his sister follow.]				

1667.

Oct. 1.	To her at Pin	1	00	00
Nov. 12.	To her going to Killerton	0	10	00
27.	To her in a peice of hangings 18 yards 3 ^l 3 ^s whereof I was to beare 1 ^l	2	03	00

1670.

Apr. 21.	To her by my sister Yard by receite . . .	6	00	00
June 25.	To her by Fr. Herne sent to Treasbeare by receite [This entry is the latest in the book.—F. B. T.] . . .	2	00	00

[The rest of the book is written the reverse way from the other end. Forty-seven pages from the beginning of the book at this end are occupied with religious reflections, chiefly of a desponding kind, and interspersed with quotations from scripture. They seem to have reference to the troubles of the time, but contain no direct allusion to passing events. Duty to the king is frequently inculcated, and dislike of atheists, anabaptists, &c. Possibly they may be notes for a sermon, and if so, it must have been long. The writing is different from all the rest, and very difficult to decipher. It may be that the book was originally begun by this writer, and afterwards used by the Sainthills. No date or name of person or place is mentioned in this part of the book, so that it is not possible to identify the writer.—R. D.]

After this follow accounts and the following memorandum, evidently Samuel Sainthill's writing:

M ^d .	I went from London Sept 13 Tuesday and arrived at Diep Thursday			
Rec:	in (interest) 200 ^l October 1653 . . .	15	00	00
Received	by bill of Exchange from M ^r Colby in 599 ^l pay ^d by Monn ^r Margos of Paris Jan. 2 ^d 1653 after an allowance of 4 ^l for returning the money from M ^r Sambourne of Rouen . . .	30	00	00

1653.

Jan. 2	50 demi: pist ^l 36 Lou: d'arg. 1 ^l 4 ^s money at 11 per pistolle at 6 . 6 per esc:			
Drawne	home upon M ^r Copson at my arivall at Legorne in March 1654 in 112 dollars 16 : 04 at 58½ for his Chr ^{mas} and Lady dayes rent . . .	27	10	00
Gien	M ^r How my bill of exchange upon J. Prowse 27th of May 1654 for 17 ^l 10. payable 4 moneth after the date, w ^{ch} summe I received at Naples in 70 ducats	17	10	
Received	at Rome of Ant: Cantoni by my un:[cles] order in 55 peices 8. at 5 per peice draune home upon M ^r Copson for his midsomer rent 1654 . . .	13	15	0

Received of Mr Charles Longland Sept 14. 1654 in \$ <i>vo</i> at 59 ¹ per \$ payable in 3 moneths upon my vnclcs acct	24	11	08
Received from Mr Prowse Dec. 4 th in 86 crownes and $\frac{1}{2}$ by bill upon Mr Wildigoose	20	00	00
Received from Mr Colby the 22 th of Jan 1655 in 257 ¹ 2 ^s w ^{ch} I drew upon him and he received from Wetttenhall.	20	00	00
Disbursments for my sisters schooling at Hacney 1651.			
For her entrance April	01	00	00
For her board June 24	05	00	00
For her extraord: that quarter	03	18	06
For mich: quarter Oct 12, 1651	07	01	04
For a 4 ^{ter} due Jan 1651	10	03	06
Sept. 2 ^d 1653 in p of arreares	08	00	00
May 2 1653	20	00	00
July 5 1653	16	00	00
July 23 1653	02	10	06
	73	13	10

Payd for her for clothes and other expences as appeares by my accounts about [Besides some clothes unaccounted for]	53	12	03
	53	12	03
	73	13	10
	132	06	01

[Numerous other payments for his sister follow.]

1658.

P ^d for clothes for my sister bought by my Aunt, August 1658	6	10	00
Dec. 24. of pease money [This occurs several times]	00	07	00
Feb. 2. At Treasbeare.			
[Latest entry under this head is March 21, 1659.]			
Received of Mr Jennings when I weare at London May 1649	30	00	00
Received of my broth: Yard before I went to Lon [Thomas Yard, of Treasbeare, died 1656. See pedigree.—F. B. T.]	05	00	00
My expences to London	05	00	00
For my horse, saddle, and furniture	09	00	00
For linnen boote hose topps	00	18	00
For bookes	03	00	00

For a riding stuffe coate and for other things to Hod: . . . 02 00 00

[This is the earliest entry in Samuel Saint-hill's writing.]

Rec of my cousin Churchill Dec 31. 1655 for the high rent of rockbeare . . . 02 00 06

My br. Hancockes Acct.

[This begins Aug. 23, 1656.] On Jan. 18, 1657, he appears to have settled with him for interest on a loan of £450 borrowed of Hancock.

1659.

Dec. 1. M^d There was due to my br: Hancock Apr last . . . 390 00 00

Dec. 1. M^d enter'd into bond to my br. Hancock to pay him 400^l the 25th March 1660.

[Entries of disbursements for Judith Hancock.]

1660.

May. P^d by my sister Reb. for trunk for Judith 00 10 00

P^d then the dancing M^r by her . . . 00 10 00

More for a comb and bodkin . . . 00 02 04

[Entries connected with his brother-in-law Hancock's death.—F. B. T.]

Aug. 8. To the littermen yt carryed my br: Hancock to Combmartin . . . 04 00 00

[John Hancock, in his will dated 25th June, 1660, desires to be buried in the church of Comb Martin by his deceased wife.—Colonel Vivian.]

To M^{rs} Cooke a gratuity in a silver boll . . . 01 00 00

To the serv^{ts} of Mr Cookes family and those y^t did for my br: H in his sickness 00 15 00

To the poore when the corps was carryed away . . . 00 05 00

Expended at Kirton and going to Molton 00 17 08

To a footman that went to Mr Cary . . . 00 10 00

[Ann Hancock married the Rev. George Cary, D.D., Dean of Exeter.]

To another y^t came to me from Exet^r . . . 00 02 06

Aug. 13. To John Dennis for making Judith 2 gounes and Phil: Score a mourning sute and cloake . . . 01 17 02

9 13 10

	23.	For a spoone for her M ^r	00	05	09
		[Other payments for stockings, riban, lace, scarf, and hood.]			
Sept.	5.	To Mr Cooke for my br: Hancocke	03	05	00
	29.	To Mr. Hornebrooke for a dozen of escutcheons in mettall	01	10	00
Mar.	22.	To a man for a horse for Ph: Score to ride w th my br. Han: hearse to Combmartin	00	08	00
	22.	To Mr Richards for gloves for his funerall	03	05	00
	26.	For a coffin for my br: Hancock by Mr Cary's order	01	10	00
1661.					
Apr.	19.	To my cousin John Hancock	00	10	00
	20.	At London	01	00	00
	29.	To him	01	10	00
May	4.	To him at Oxford	00	10	00
	5.	To Mr. Ford for Caution money	06	00	00
		For admission	01	00	00
		Officer's fees	01	09	06
	7.	To him more at my going from Oxford	00	10	00
	17.	Remitted to M ^r Bayly of Oxford to be p ^d Mr. Ford for my Cous: J: Hancocks use	10	00	00
Aug.	5.	Layd out for a goun and petticoate for Judith as by the noate	02	00	08
		For a coife and pinner, a love hood, a band and pendants and a combe	00	13	00
	17.	To Judith for her entrance w th the virginall m ^r	00	05	00
	26.	For aprons and smockes for Judith	00	10	02
		[After this follow numerous payments for Judith's clothing, schooling, and pocket money; also remittances to his cousin John Hancock at Oxford. Also for Judith's journeys to Exeter, Honiton, Treasbeare, &c.; in fact all her expenses seem to have been defrayed by S. Saint-hill down to 1667.—R. D.]			

Written on a fly-leaf is:

6^s 8^d for a fine for fishing wth in the maner.

Coke: Acra in Cornwall continet 40 perticabas in longitudine & 4—latitudine & quaelibet perticata de 16 pedibus in longitudina.

M^d. Writings and papers left with Mr Colby:

1. The counterpart of Evans his lease from my uncle.

2. My cous: Martins & Mr Jennings his deed to me of Cowton.

3. Bills of Irish money 225.

Mem. My debt to M^r Colby when I left England was about 46^l for money lent me and layd out by him in my businesse.

Samuel Sainthill, who wrote these accounts, was the elder surviving son of Peter Sainthill, the Cavalier. He seems to have had a great deal of difficulty after his father's death in compounding for his estates; but at last, in 1651, a large fine was fixed, and he subsequently obtained possession of nearly all his father's property. His father's loyalty to his King, and his sacrifices in the Royal cause, were scarcely appreciated by Charles II., for it is said that the only reward the Sainthill family ever received was a pardon granted to Peter Sainthill on March 30th, 1668 (nearly twenty years after his death) for any *offences against* the Crown. Samuel Sainthill lived most of his very long life at Bradninch, making occasional journeys to London, or visiting his sister at Treasbeare. He died at Bradninch, November 14th, 1708, in the 83rd year of his age, and was buried under the Communion-table in the Church of St. Dionysius at that place, in the family vault. He was the last male representative of the Bradninch Sainthills, and had never married. On his death his estate went to his sister's son, Edward Yard, who took the name of Sainthill. He seemed likely to follow his uncle's example, and die a bachelor; but the year his uncle died he was married, having at that time reached the age of 71. Through his descendants the estates passed to the family of Pearse, which, I am told, is now also extinct.

The following chronological table of events in connection with Peter Sainthill and his son Samuel, between the dates of the earliest and latest entries in the MS. note-book, has been compiled partly from that little volume and partly from other sources, all of which are indicated :

- 1644. July 24. Peter Sainthill's first entry in the MS. note-book.
- 1644. July 27. The King visited Bradninch House. (Symon's *Diary*.)
- 1645. Apr. 23. Peter Sainthill one of Commissioners who met the Prince of Wales at Bridgewater. (Clarendon, ii. 639.)
- 1645. Sept. or Oct. Peter Sainthill left Exeter for Leghorn, going *via* Cornwall. (*Olla Podrida*, i. 301-313.)
- 1646. Apr. 17. Pass from General Fairfax. (*Olla Podrida*, i. 311.)
- 1646. May. Arrived at Leghorn. (*Olla Podrida*, i. 313.)
- 1646. June 15. Seriously ill, according to doctor's certificate. (*Olla Podrida*, i. 313.)
- 1646. July 24. Order concerning his composition dated. (*Olla Podrida*, i. 312.)
- 1646. Aug. 5. Deposition of John Were, John Bury, and John Butler. (*Olla Podrida*, i. 313.)

1648. Aug. 12. Died at Leghorn. (Oliver's *Ecclesiastical Antiquities*, ii. 19.)
1649. May. Samuel Sainthill in London. (MS. note-book.)
1651. April. His sister entered school at Hackney.
1651. Sept. 9. Fine for compounding his estates fixed. (*Olla Podrida*, i. 315.)
1651. Sept. 24. Fine for compounding his estates partly paid. (*Olla Podrida*, i. 307.)
1651. Dec. 15. Granted land to his brother-in-law Yard. (*Olla Podrida*, i. 317.)
1653. Sept. 13. Left London for Dieppe and *via* Paris to Leghorn. (MS. note-book.)
1654. March. At Leghorn, then to Naples and Rome. (MS. note-book.)
[Date of return from Continent uncertain, probably before August 23rd, 1656, and after January 22nd, 1655.]
- 1656-7 (Between January and April.) Brother-in-law Yard died. (MS. note-book.)
- 1657 (Before March 1st, 1657-8.) Uncle Walter Veysie died. (MS. note-book.)
1657. July 4. "I came home" [to Bradninch]. (MS. note-book.)
1658. July 30. His mother visited Bradninch. (MS. note-book.)
1660. Aug. Brother-in-law Hancock died. [Samuel Sainthill seems to have been made trustee for Hancock's children, John and Judith; the former was at Oxford 1661.] (MS. note-book.)
1660. Oct. 1. His sister [Rebecca?] left him; she had apparently kept house for him. (MS. note-book.)
1663. His mother died. (*Olla Podrida*, i. 308.)
1664. May (between 14th and 20th). Brother Robert died. (MS. note-book.)
1664. Sept. 6. Administration granted on Robert's estate. (*Olla Podrida*, i. 317.)
1665. Aug. 24 to June 25, 1670. His sister [Rebecca?] resided with him.
1668. Mar. 30. Pardon granted to Peter Sainthill by Charles II. (*Olla Podrida*, i. 301.)
1670. Apr. 21. Latest mention of his sister Yard. (MS. note-book.)
1670. June 25. Entries end with his sister [Rebecca's] account. (MS. note-book.)

HUGH RHODES.

BY F. T. ELWORTHY.

(Read at Tavistock, August, 1889.)

IN vol. xix. p. 70, of the *Transactions* of this Association are some remarks upon the introduction of handkerchiefs into polite society, and some quotations from various authors upon that subject. One of the books quoted from was *The Booke of Nurture and Schoole of Good Manners for Man and for Chylde*, by a certain Hugh Rhodes. And on looking further into the book it seemed that much of interest relating to the manners and education of the sixteenth-century might be extracted from it. Moreover, Hugh Rhodes himself having been a Devonshire worthy, some account of his life and times should be acceptable to this Association.

Among educational books, or perhaps more correctly on their outskirts, there have been from early times treatises on manners and deportment, or, as we might now call them, "Books of Etiquette." The writer of the *Booke of Nurture* we are now considering—for there are several so called—is described as "Hewe Rhodes of the King's Chapell;" and from other evidence it is most likely that at the time he wrote he was what was called "Maistre of the Childre," or choristers, in the time of Henry VIII., before the Reformation.

It appears to have been customary, not only for the king, but also for the great nobles, to keep up a regular establishment of what were called "gentyllmen and childreyn of the chapell," corresponding to the vicars-choral and choristers of the present day. Thus we find in the household books of the fifth Earl of Northumberland, A.D. 1510-11, that he had "daily abidyng in his household—Gentillmen of the Chapell, ix.; viz., the Maister of the Childre, j; Tenors, ij; Counter-

tenors, iiij; the Pistoler, j; and oone for the Orgayns; Childer of the Chapell, vi."

We are also told in great detail what were to be their daily allowances of Brede, of Bere, and of Fish during Lent. On the Scambling Days—*i.e.*, Mondays, Wednesdays, and Fridays—no regular meals were generally provided, but every one had to scramble or shift for himself. In my Lord of Northumberland's house, however, it was ordered that the "Service of Meat and Drynk to be servyd upon the scamblynge Days in Lent yerely."

We are further given the "Ordre of all suche Braikfasts that shal be lowable daily in my Lordes hous thorowte the yere, as well on Flesche Days as Fysch Days, in Lent and out of Lent."

The details are given of their daily extras or "Lyverays of Wyne, White Lights and Wax, also of "Fewell, as to say Woode and Cooles." Of these latter the allowance was for "the Maister and Childer of the Chapell j p." (peck). The washing of surplices, &c., was provided for—"Ther shal be paide fore the Holl weshing of all mannar of Lynnon belonging to Lordes Chappell for an Holl yere, but xvijs. iiijd. And to be weshed for Every Penny iij Surplusses or iij Albes. And the said Surplusses to be Weshide in the yere xvj tymes agaynst thees Feests following."

No provision appears to have been made for personal washing; indeed, other particulars, to be given later on, rather show that such operations were considered somewhat superfluous.

Their salaries were to be paid at certain specified times, and the payment was secured by charge upon the "Revennyys of my Lands of Yorkschyre." "Gentilmen of the Chappell, x (as to saye, Two at x Marks a pece—iiij at iiij l. a pece, Two at v Marks a pece, Oon at iiij Marks, Oon at xls., ande Oone at xxs.; viz., ij Bassis, ij Tenors, ande vj Counter tenors), Childeryn of the Chapell vj, after xxvs. a pece. And so the hole somme for full contentacion of the said Chapell waigies for oone hole yere ys—xxxv. xvs."

It thus appears that the salary of one of the "Gentilmen" was lower than that of the boys.

The gentlemen slept two, and the boys three in a bed, and this seems to have been the rule for priests also; for it is provided that there shall be "for vj Prests iij Beddes after ij to a Bedde; for x Gentillmen of the Chapell v Beddes after ij to a Bedde; and for vj Children ij Beddes after iij to a Bedde."

Our author, however, belonged to the "Kings's Chapell," and it is therefore to be supposed that he fared at least as well as those of the household of the Percy.

Indeed, we have the table of the wages, though not so full an account of details, of the king's household as to board and lodging as in that of the Earl of Northumberland. Some of the king's "Gentilmen of the Chapell" seem to have been paid in money and extra fees, and to have "found" themselves, while others were fed and lodged.

GENTLEMEN OF THE CHAPELL.

	£	s.	d.
Master of the Children, for his wages and board wages	30	0	0
Gospeller, for wages	13	6	8
Epistoller "	13	6	8
Verger "	20	0	0
Yeomen of the Vestry	10	0	0
Children of the Chapel, ten			
	56	13	4

Of the social status of these "Gentilmen" there is reason to assign them a somewhat higher level than their successors of the present day. In fact they were what we now call "gentlemen," and, indeed, their rank at court was above the "apothecary and the chirurgions," but below the physicians. They were certainly above the epistoler and gospeller, as we see by position on the list and amount of salary; and also because we read in another ordinance that "the Gentlemen of the Chapell, Gospeller, Episteller, and Serjeant of the Vestry shall have from the last day of March forward for their board-wages, everie of them 12d per diem; and the Yeomen and Groomes of the Vestry, everie of them 6d per diem: and twelve children of the Chappell, every of them 2s. by the weeke."

In another place we find that they had "Bouche of Court as the Physicians;" *i.e.*, when they were not on board-wages. This "Bouche of Court" was the livery or daily allowance of food, drink, and fuel, and we find that of our author was worth about £1 12s. per annum more than a surgeon's. On the whole, taking the difference of values into account, he and his colleagues were not ill paid. Wheat was then about 6s. per quarter.

The hours for meals in the king's court were distinctly ordered—"It is ordeyned that the household, when the hall is kept, shall observe certeyne times for dynner and souper, as followeth; that is to say, the first dynner in eating dayes

to begin at tenn of the clock, or somewhat before; and the first souper at foure of the clock on worke days."

Of the duties of those belonging to the king's chapel, we are told, "Forasmuch as it is goodly and honourable that there should be allwayes some divine service in the court . . . when his grace keepeth not his hall, and specially in riding journeys . . . it is ordeyned that the master of the children and six men . . . shall give their continual attendance in the king's court, and dayly, in absence of the residue of the chappell, to have a masse of our Lady before noone, and on sundayes and holydayes, masse of the day, besides our Lady masse, and an antheme in the afternoone."

It is probable, then, that Hugh Rhodes's chief business was to assist in the administration of divine service, and that it was also his duty to teach the chorister boys their "grammar, songes, organes, or such other vertuous things."

Where or when he was born are not recorded, nor do we know anything at present of his parentage. Being no genealogist, I cannot say if the name of Rhodes is to be found among the Devonshire gentry, but most probably it is. He says but little of himself, and is silent as to the circumstances which led to his position at Court. He may himself have been one of the "Childryn," whom it was afterwards his duty to teach, and, if so, very likely he was impressed into his majesty's service by force. The custom of seizing boys for this purpose had evidently long been common, and had been officially authorised in 1454, nearly a hundred years previously, by precept of Henry VI.

Our old friend Thomas Tusser, the author of the *Five Hundred Points of Good Husbandry*, a contemporary of Rhodes, was a chorister boy, and was impressed into the service of the king's chapel. He writes:

"There for my voice I must (no choice)
Away of force, like posting horse;
For sundry men had placards then
Such child to take."

Afterwards, by some means, Tusser was sent to Eton, and in his day he was evidently not spoiled by sparing use of the rod.

"From Paul's I went · to Eton sent
To learn straightways · the Latin phrase
When fifty-three · stripes given to me
At once I had :

"For fault but small · or none at all
It come to pass · thus beat I was.
See, Udal, see · the mercy of thee
To me poor lad !"

Among the names of those so captured we find some Devonshire names, such as Farrant, Halyday, Wykes (or Weeks), and Clyffe.

Not only were the choristers dragged away from home, but it is very probable that from their number was selected, by what process we know not, the unfortunate whipping-boy who had to bear the thrashing when a prince of the blood deserved correction. This curious custom lasted down to the time of Charles I., who certainly had a whipping-boy named Murray.

Rhodes gives no hint that he had suffered for his master's faults, nor does he appear to have fallen into any disgrace, although there was a strict overhauling of the chapell-men every Friday by the Dean, who sought out and "auoided" from every office all "rascals and hangers upon thys courte." From his modesty and the general tone of his writings, considering the times, he must have been a grave, sober, and highly respectable person.

In judging of the hardship of boys with a good voice being dragged away forcibly to be brought up as church musicians, we must remember the customs and state of education at the time. From as early as the reign of Henry II., if not earlier, the sons of nobles and gentlemen were sent for their education to the houses of other nobles, or to the king's court, where as pages, or, as they were called, henchmen—from German, *hengst*, a war-horse; or, as others hold, from their place at the *haunch* of their lord—they learnt obedience and outward reverence as the actual servants of their patron and protector.

It is expressly stated that these *henchmen* were always gentlemen, who were always considered as pages of honour, and that subsequently as they grew older they became esquires. They were always treated as of the lord's own family, notwithstanding that they had to wait at table, to walk by his charger, and generally to do his bidding. It was when they had received the knight's belt, that they returned to their father's house, or to their own patrimony. The proud Becket had many sons of nobles in his household; even the king himself trusted him with his son and heir to be trained with the noble youths he had about him.

Longchamps, Bishop of Ely, and Chancellor of Richard II., is noted for the severity of his rule over the sons of nobles in his service.

Wright says that the system was in part a principle of Anglo-Saxon society at the earliest period; that a Teuton

chief gathered round him a troop of young retainers in his hall, who were his voluntary servants; and that they were in fact almost the only servants he would allow to touch his person. Such being the custom, it is hardly a matter of surprise that boys younger than pages of honour, being wanted with good voices for service at the more ornate religious functions, should be sought for among the gentry, and being found should be compelled to take service with some special lord who needed them, where a special education was provided for them, differing widely from that of other youths of their own rank. It may be that it was this very difference in learning which made it necessary to capture boys, and force them to be taught something more than was considered fitting to one of gentle blood.

No doubt by the middle of the sixteenth-century the great renaissance was beginning to be felt even in England, and although slowly, yet the appreciation of the value of learning was taking root among the upper classes, so that others than poor scholars intended for the priesthood were taught grammar, *i.e.* Latin. Even before this time we find that Edward IV.'s henchmen were taught grammar, and there is reason to believe that most of the nobles and gentry at the end of the fifteenth century were able to read and write tolerably. But even in Henry VIII.'s time, when the nobility had taken to writing ballads as a fashionable recreation, the bad spelling and composition of most of the letters of the period, together with the general ignorance of the upper classes, were the sufficient reason why the entire government of the country was in the hands of ecclesiastics. This is sufficiently shown by the fact that down to this period it was still customary to seal deeds and important documents instead of signing them.

Lilly, head master of St. Paul's School, established by Dean Colet, was the first of his class to teach Greek in England. This was soon after 1500, and in 1514 Erasmus spoke of it as the best school of its time.

What was the current notion of the gentry as to the study of letters, certainly down to the beginning of the sixteenth-century, is shown in a book, bearing date 1517, by one Richard Pace.¹ In a prefatory letter, written in Latin, to Dean Colet, he speaks of a certain feast where "There happened to be present one of those whom we call gentle-men, and who always carry some horn hanging at

¹ Richardi Pacei, *De Fructu qui ex Doctrinâ percipitur*, Liber. an. MDXVII. Basileæ.

their backs as though they would hunt during dinner. He hearing letters praised, roused with sudden anger, and burst out furiously with these words, 'Why do you talk nonsense, friend? A curse on those stupid letters! All learned men are beggars: even Erasmus, the most learned of all, is a beggar (as I hear)! . . . I swear by God's body I'd rather my son should hang than study letters! For it becomes the sons of gentlemen to blow the horn nicely, to hunt skilfully, and elegantly carry and train a hawk. But the study of letters should be left to the sons of rustics!'" If such were the common opinion of their fathers, we need hardly wonder if gentlemen choristers had to be caught and caged.

All cadets of good families could not, of course, find service as pages of honour, and the veil is lifted a little as to the rest when we find it recorded that, even in the house of the proud Percy, whose domestic accounts we have already examined, there were "yong gentlemen at their fryndes fynding, in my lords house for the hoole yere;" and again, "Haunsmen ande Yong Gentlemen at their Fryndes fynding vj (as to say, Hanshmen iij. and Yong Gentlemen iij.)." That is, there were as many there at the cost of their parents as were in the actual service of the earl. The same thing appears to have been customary in all the great houses from the time of the Saxons; for in 1160 we read of the nobles, "*Exemplar morum domibus procedit eorum.*" And apparently manners were all the youth were ever intended to learn.

We should not here overlook the fact that one of our most famous public schools, with its affiliated college at Oxford, had before Rhodes's time adopted for its motto, "*Maners makyth man;*" and that, in the days of their foundation, the motto was held to be a very literal and true aphorism.

Much might be said as to the development of our great public school and college system, and as to the way in which the foundations intended for poor scholars have, in these days, become virtually the possession of the rich; but we have already wandered far enough from Hugh Rhodes, in trying to picture the atmosphere in which he lived.

It is then to be expected that—his business being to teach, and good manners being the sole end of education, according to the views of the parents of his charges—his writings would take a professional turn, and, like our new primers and readers, would reflect the then best and most

improved ideas of what should be taught and how to teach it.

Hence we find that his principal work was "*The Booke of Nurture and Schoole of Good Maners for Men, Servants, and Children*, with *Stans puer ad mensam*. Newly corrected, very necessary for all youth and children. Compyled by Hugh Rhodes of the Kinges Chappell."

This work is divided into six parts :

I. "The Boke of Nurture for Men, Seruantes, and Chyldren." A short prose exhortation to parents and masters, how that teaching children is "a hye seruyce to God;" that children and servants must use reverence and "curtesye" to their betters; that schoolmasters must fear God, live virtuously, and punish sharply; that servants and children should not be sumptuously apparelled, nor allowed to use bad language; and generally to keep the household in good order.

II. "The Maner of Seruing a Knight, Sqyre or Gentleman." Another prose direction to servants, to find out their master's ways and appetites, to carefully keep an inventory of all things in their charge, and to see your "napry be cleane," with particular directions as to preparation and serving at table—"to lay forth a Towell on the boord" if there are any "conceites after dinner, as appels, nuts or creame."

III. "How to order your Maysters Chamber at night to bedwarde." Containing quaint instructions to "A Ray your Cupboord with a Cupboorde Cloth, wyth your Basyn, Ewer, Candle light, and Towell." "In the morning, bring him his petticote warme, with his doublet, and all his apparell cleane brusht, and his shoes made cleane, and help to arraye him, trusse his poyntes, stryke up his hosen, and see all things cleanlye aboute him."

IV. "The Booke of Nurture," &c., is an expansion of the "*Stans puer ad mensam*" referred to in the title, and consists of a rhyme of 384 lines.

V. "For the waiting Seruant." The most important and elaborate part of the book, consisting of 796 lines of rhyming directions and maxims, with advice not only to the servant, but to men in general.

VI. "The Rule of Honest Liuing" is a short exhortation, partly prose and partly verse, which sums up, or repeats, much that has gone before.

The chief interest is to be found in Parts IV. and V., from which we can best understand the manners of Henry VIII.'s day.

He begins, after a line or two of exhortation to obedience in youth, by introducing himself:

"I am full blynde in Poets Arte,
thereof I can no skill:
All elloquence I put apart,
following myne owne wyll.
Corrupt in speeche, be sure, am I,
my breefes from longes to know,
And born and bred in Deunshyre to,
as playne my tearmes doe show."

He then asks pardon if he offends in his teaching either master or servants, and tells them—

"Set your yong people forth with spede
good manners for to learne."

And next addresses the "yong people," giving much particular and detailed advice as to behaviour to parents, to God, and as to their own habits: how that after rising at six, and saying their prayers,

"Or from thy chamber thou doe passe,
see thou purge thy nose cleane" (l. 69),

To make up their bed, wash hands and face, wish fellows good-day, do reverence to parents, have dress clean, be gentle of speech, behave well at church; whether serving or dining to "encline to good manners;" if dining, wait for your "soueraygne" to begin; don't press,

"Syt in the place appoynted thee
for that is curtesye" (l. 135);

"Pare not thy nayles, fyle not the cloth" (l. 139);

Stand up and take your cap off if the "mayster" speaks to you; stand properly; trifle with nothing; pronounce your words distinctly; listen when your "soueraygne" speaks; when speaking to any man gaze thou not to and fro." With much more as to behaviour at table.

"And suppe not lowde of thy Pottage
no tyme in all thy lyfe;
Dip not thy meate in the Saltseller
but take it with thy knyfe." (l. 204.)

They are to "wype cleane thy spone"—we are not told on what—and to take care that it is not stolen. Be not greedy, and burnish no bones with your teeth; "rend not thy meat asunder" (remember, forks were unknown till long after Rhodes).

"Belche thou neare to noe man's face
with a corrupt fumositye,
But turne from such occasyon, friend
hate such ventositye." (l. 232.)

"Scratche not thy head with thy fingers, nor spytte you ouer the table-boode."

"Pick not thy teeth wyth thy knyfe
nor with thy fingers ende,
But take a stick, or some cleane thyng,
then do you not offende" (l. 248).

Next we have directions as to the use of the napkin, an article quite indispensable to every table of quality in those days of no forks; and this would account for the large number of napkins in proportion to other "napery" found in the inventories of household effects of the sixteenth and seventeenth centuries, but not observable since then.

"Wype thy mouth when thou shalt drink
Ale, Beare, or any Wyne;
On thy Napkin thou must wype still
and see all thing be cleane."

This was a needful caution against using the "board-cloth."

"Blow not your nose on the napkin
where you should wipe your hande;
But cleanse it in your handkercher,
then passe you not your hande.
Wyth your napkyn you may oft wipe
and make your mouth full cleane,
Some thing that thou canst not espye,
of others may be seene."

Then he tells them not to cram the mouth too full, to keep from excess, not to blow out the crumbs in eating; and again he returns to "the subject of spitting:"

"Fowle not the place with spitting
whereas thou dost syt,
Lest it abhorre some that syt by:
let reason rule thy wyt.
If thou must spit, or blow thy nose,
Keepe thou it out of sight,
Let it not lye upon the ground
but tread thou it out right." (l. 292.)

You are not to fill the "trenchour" "wyth bones or voyd morsels," but "auoyde them into a Voyder" (l. 295); how to drink when offered the cup by the "Soueraygne;" not to blow on your food, lest the breath may be "corruptable;" not to stretch or loll about; not to "scortche" (whittle) the table; to eat what is set before you; and when having finished, to put your "trenchour," all your "resydence" (leavings), including your napkin, into the "Voyder." Then follow other directions more in accordance with modern etiquette.

The advice to a "wayting servant" is first to serve God, then as to dress, friendship, and conversation, next as to

industry and thrift—that a truthful servant will be rewarded, while a careless one comes to poverty, &c.

Rhodes betrays his clerical worldliness in his remarks on marriage—

“For your promocyon resort to such
as ye may take avantage,
Among gentylmen for rewardes
to gentylwomen for marriage.”

After describing a gentle, a foolish, and a scolding wife, he says some are devils. “Fayre and good” are “scantly in one body seene;” that great difference of age is wrong. And after a great deal more about women, he finishes his say about them with—

“For few wordes to wyse men is best,
and thus I make an ende” (l. 228).

He then preaches a moral discourse as to general conduct:

“Euill men take great payn to buy Hell—
and all for worldly pleasure—
Dearer then good men buy heauen,
for God is thar treasure.” (l. 280.)

“Be not mooned if case thy friend
tell thee thy faults full playne.” (l. 633.)

“To suffer wrong is vertue pure
fond fooles cannot doe so.”

That borrowers seek their own advantage not yours; give to the poor; speak the truth; mock no man; abuse not an enemy; don't boast of high birth; keep your own counsel; be courteous to strangers; don't be suspicious, and a vast deal besides, finishing up with—

“He that hath a good Mayster and cannot keepe him,
He that hath a good Seruant and not content with hym,
He that hath such condicions that no man loueth hym,
May well know other, but few men wyll knowe hym.”

Our author seems to have been quite the Tupper of the sixteenth-century; for no less than five editions of his book were printed from about 1530 to 1577, which, considering that people did not read much then, bespeaks great popularity. The first edition, date unknown, must have been printed in Wolsey's time, because the lines—

“To helpe a preest to say masse
it is greatly to be commended,”

and—

“Thou takest on hand an aungels office
the preest to attend,”

were omitted in the later ones; but it is pretty clear that our author was never himself reformed; for in Mary's reign

he published a poem, called "The Song of the Chyld-Bysshop, as it was songe before the queens maiestie," which, according to Warton, shows that she countenanced the most ridiculous and unmeaning ceremonial, and that the song itself is but a fulsome panegyric on the queen, comparing her to Judith, Esther, the queen of Sheba, and the Virgin Mary.

It is interesting to note that in all his minute directions as to dress and deportment only once or twice is there any hint as to personal washing, and even then it is confined to the face and hands. We have seen that washing was only provided for the chapel linen and the surplices in 1511; but we find that before then, in Edward IV.'s time, soap was only provided in the king's house for the washing of clothes, though possibly it may have been otherwise used. But the filth of all classes was indescribable, and from many sources we may judge that even princes were no strangers to vermin and other accompaniments of dirt.

The scullions of Henry VIII. lay about naked in the kitchens, and were so filthy that there was a special ordinance, in 1526, "for the better avoydyng of corruption and of all uncleanness out of the king's house," making provision for "such scolyons as shall not goe naked or in garments of such vileness as they now doe, and have been acustomed to doe, nor lie in the nights and dayes in the kitchens or ground by the fireside."

Further, Wolsey, when going to Westminster Hall, held in his hand "a very fair orange," which had been scooped out and the inside filled with a sponge saturated with vinegar and "other confections," against the pestilent airs of his many suitors.

Erasmus, in a letter to Francis, Wolsey's physician, speaks of the plague (scarcely ever absent) as due to the filth of the streets and houses. He says, "The floors are commonly of clay, strewed with rushes, under which lies unmolested an ancient collection of beer, grease, fragments, bones, spittle, excrements and urine of dogs, cats, and every thing that is nasty." (Jortin, *Life of Erasmus* (ed. 1808), vol. i. p. 69.)

This was merry England in the olden time; but we may be thankful here was but the reverse. Those very dirty men had brave hearts, and here in Devonshire especially that bravery had soon to be put to the test. If now we have been dwelling on the words and times of an obscure Devonshire worthy, Hugh Rhodes, in a few more years we are quickly led to the deeds of other Devon men whose names will never perish—Drake and Hawkins.

THE GREAT CENTRAL TRACKWAY—DARTMOOR.

BY ROBERT BURNARD.

(Read at Tavistock, August, 1889.)

ALL that is known of the Great Central Trackway is contained in Rowe's *Perambulation of Dartmoor*. It is described as follows:

"The most extensive trackway which has come under our notice is one which is supposed to traverse the forest in a line, bearing east and west, from Hamilton to Great Mistor. Considerable portions of the line can be traced in a direction corresponding to these points, but a large extent of it rests rather upon the testimony of tradition than upon the evidence of existing remains. The oral topographers of the uplands recognize this trackway as the *equator of the moorland region*, all above it being considered the *north*, and all below it the *south* country, a circumstance which, though it affords good evidence of the antiquity of this relic, might be supposed to give it the character of a boundary rather than of a road; but which will have less weight in this scale when we consider how frequently antient roads are found to form boundaries between parishes, manors, and other divisions of country. This trackway may be observed in high preservation coming down the northern slope of Chittaford Down, towards the banks of the East Dart. Here it can be traced for a considerable distance, and is visible running due west, through Hollocombe, and up the opposite hill to Little White Tor. Down the common, towards the Dart, it bends towards the north-east, but in the level near Post Bridge, it takes a direction southward. With some difficulty it may be detected through the boggy meadows below Hartland farm. The peat cutters are reported to come upon it below the surface in some places; nor is it at all unlikely that the encroachments of the vegetation, which in some instances are only partial, should in others have extended over the whole breadth of the trackway, and thus have obliterated all traces of it in the lower grounds."

With this information Mr. R. N. Worth has hypothetically connected this trackway with the Fosseway, which it is supposed ran from one end of our island to the other, and, as will be seen later on, with success.¹

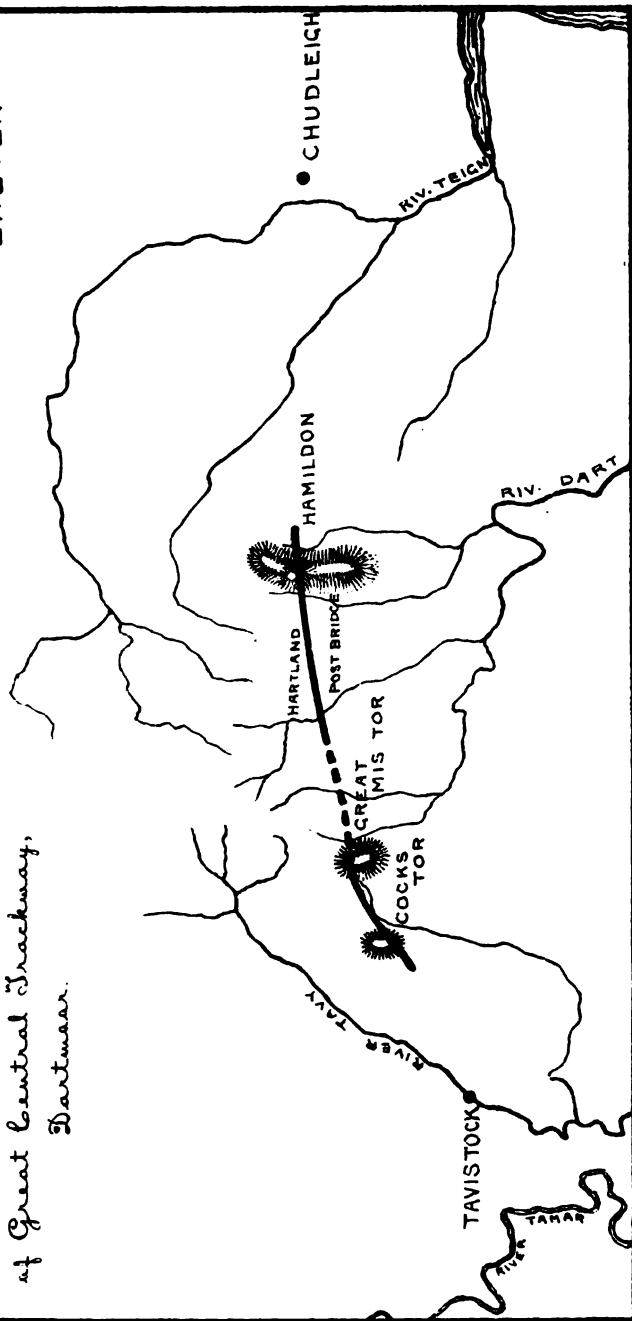
With this slender material I determined to thoroughly investigate the matter, and this preliminary paper is the result of many days' wandering over the Moor in search of one of the most interesting relics it possesses of a long bygone age. In this search I have been greatly helped by the Rev. John Shattock, and Mr. John Shattock, both of Post Bridge. These gentlemen have taken a kindly and lively interest in my labours, and have rendered much assistance in obtaining information from the moormen, and tracking out the causeway in places where all traces of it have been almost obliterated.

In many places it has entirely disappeared, sometimes by sinking bodily into the bog, or removed by turf cutters and wall builders. It is a fine deposit of handy stones, and has been extensively drawn on by the inhabitants of the Moor. In Webb's Marsh at Post Bridge the trackway is thus utilized, and it was from this point that I determined to start my investigation in a westernly direction. Here the removal of the stones has exposed a good section of the causeway, and it will be observed that the width of the paved way is just ten feet, whilst the depth in the centre is about two to two and a half feet. Rough stones, just as they are found on the surface, have been rudely built in so as to form a solid bottom. There are no traces of the covering of finer material forming the surface, but this could easily have been supplied by means of gravel. I have assisted in making a roadway myself formed in this manner, and it is firm and hard, freely drained, and free from mud. Compared with a Roman road, consisting of several courses of carefully built-in material, this section shows a crude, but effective construction, and one adapted for the best use of the only available matter to be had along the line of route. In soft ground the causeway generally appears to be most perfect, for it has sunk out of reach of the weather. On hard ground, owing to weathering action and surface disturbances, the trackway presents in many places the appearance more of a boundary than a causeway—a confused mass of stones of all sizes, the whole being from eight to ten feet wide, and heaped up from two to four feet above the ground level. This is so striking that, had I not traced such a portion to another

¹ Ancient Recorded Topography of Devon, *Trans. Devon. Assoc.* xvii. 351.

Sketch Map
of Great Central Trackway,
Dartmoor.

EXETER ●



which was undoubtedly a causeway, I should never have felt confident that the assumption of a trackway was absolutely correct. The effect of the weather on Dartmoor is often underrated, and its action on a raised causeway for very many centuries can hardly be realized. In Webb's Marsh the trackway is barely visible, and in many places between it and the East Dart it has disappeared, but it can be traced down to where it crosses the Stannon Brook, and from thence through the former river by a ford adjoining what is locally known as Still Pool.

Rowe, referring to the Cyclopean Bridge observes that the "ancient structure bears more east and west than the modern bridge, and probably thus points to the great central trackway which passes over Chittaford Down."²

I fear this paragraph is largely responsible for the popular notion that this bridge is of great antiquity. It is often referred to as aboriginal British work, and various conjectures have been hazarded as to the manner in which its massive stones were placed in position. It can claim no antiquity through connection with the Great Central Trackway, for the point at Still Pool, where the latter crosses the East Dart, is fully five hundred yards north-west of the bridge. It was used as a pack-horse bridge a little over a century since,³ and it was probably erected for this purpose, *perhaps* in mediæval times, when it may have replaced a timber structure which left its mark on the name of the village—Post Bridge.

There are several similar bridges on the Moor connected with pack-horse roads, and it is tolerably safe to assume them to be fairly ancient, but not of great antiquity.

Bridges of a similar character have been built quite recently on Dartmoor—an example of this may be seen under Ledder or Leather Tor.

From the East Dart the trackway is faintly visible crossing the corner of the last field of the Archerton estate on the right bank of the river. Nearly halfway up this field it emerges on to Chittaford Down, where it is ultimately lost in a turf tie. It can, however, be easily picked up later on in undisturbed ground, and followed without the slightest difficulty down to the headwaters of the Cherrybrook, when it climbs the steep up to Little White Tor, where it is lost.

It runs into the centre of the Tor, and appears to end

² *Perambulation of Dartmoor*, 173.

³ Jonas Coaker, now eighty-nine years old, informs me that his mother has often ridden over it on her way to Moreton market.

abruptly. This puzzled me for a long time; for the most diligent search on the slopes of the hills and in the valleys of the West Dart and Cowsic failed to discover the continuation westward. I noticed that the summits and slopes of the hills facing the west and south-west were seamed and scored in all directions by the action of the weather on the black peaty soil, so that if the trackway had formerly existed here at all, it had probably been long since destroyed. What increased the mystery still further was, that the eastern slopes were not so weathered, but were smooth, hard, and free from clatters of rock, so that here at anyrate the line of trackway should be visible. Not a trace of it, however, was to be seen, and the closest examination of Little White Tor gave no clue why such an important road should terminate in such a place. I determined therefore to try forward, and my next attempt was to pick it up further west. For this purpose I carefully searched the neighbourhood of Steeple and Rolls Tors, and was duly rewarded by finding the missing link running up the slope of Rolls Tor, where it was again lost in the clatter and boulders forming the summit of this elevation. The point where it evidently crossed the Walkham is one thousand three hundred yards, as the crow flies, above Merivale Bridge, and the outer wall of the most northerly field of Shillapark Farm appears to be built of stone taken from it; for where the wall ceases the trackway begins. At the crossing-place in the river there is a confused mass of large boulders, which may have been stepping-stones, or the ruins of a primitive bridge. Although lost on Rolls Tor, and with no sign of it on the western slope, it was again plainly visible running up the eastern side of Cocks Tor, which it crosses near the southern summit, proceeding down the western face, passing a hut circle in close proximity, until it is finally lost in the cultivated country near Tor Town, heading straight for Tavistock.

It is necessary now to return to Webb's Marsh, Post Bridge, and follow the trackway eastward.

It crosses the road between St. Gabriel's Church, and the Methodist Chapel, close to the garden attached to the latter and sweeps up over Merripitt Hill, crossing the Walla Brook five hundred yards below Statts Bridge, and follows the boundary wall which runs close to Golden Dagger Mine, where it is lost in the workings, to re-appear for a short distance up the opposite slope of Challacombe Common. It is very difficult to follow the track all through this section,

but here and there it can be made out, and the blanks can be filled in. The boundary wall near Golden Dagger is built partly on the causeway from stones taken from it.

On ascending Hameldon it is again picked up; for here the causeway is well defined and easily followed.. It is readily recognized at the head of a bog situated just midway, but rather below Hameldon Tor and Hameldon Cross, or about six hundred yards south of Grimspond.⁴ The further it proceeds the better it becomes, and it again assumes more of the character of a paved causeway of about ten feet in width, and raised in the centre some two feet above the ground. Crossing Hameldon it runs down its eastern slope into a deep gully, where for a short distance it skirts the brook, and crosses the Widecombe road about two hundred and seventy yards north of Higher Notsworthy, close to a moor gate. It then ascends Heytree Down, where it has been utilised as the northern boundary of what were formerly three fields, but which are now thrown into the common. The trackway appears to have been heightened by trenching on each side, and piling the stones and earth higher in the centre, but even with this alteration it can be recognised, and all doubt about it is easily dispelled by following it almost yard by yard to the perfect section on the summit of Hameldon. At the eastern side of Haytree Down the track is lost in two cultivated fields and a small wood, which are wedged in between it and Cripdon Down. It heads for Chudleigh, where I hope to trace it later on.

The ancient map of Dartmoor, which has been minutely examined and described by Mr. Spence Bate,⁵ shows a road crossing the Forest from a point between Great Mistor and North Hisworthy, and proceeding by the heads of the Walkham and Tavy until it emerges in the north-eastern boundary between Hound Tor and Therlestone, which latter place may be identified with Watern Tor, or as Mr. Spence Bate contends, with Scorhill.⁶

This ancient road does not correspond with the trackway, for although both commence crossing the western boundary of the Forest near each other at Great Mistor, they do not follow the same course, and the latter quits the forest on the eastern edge, some six or eight miles south of Hound and Watern Tors.

⁴ There appears to be no connection between this ancient pound and the trackway.

⁵ *Trans. Devon. Assoc.* v. 510.

⁶ *Ibid.* v. 523-525.

There is no doubt that this ancient map of Dartmoor, or at any rate the portion depicting the Forest, is of mediæval antiquity, and if the trackway we are now examining had existed as a "going concern," it would have figured on it, or have been mentioned in the Perambulation it illustrates. Its absence, if any reliance can be placed on this crude map, indicates that centuries since this causeway probably existed much in the same ruinous and forgotten condition it now presents.

There is nothing local in the character of this trackway.

It heads for Exeter, *vid* Chudleigh, on the east, whilst it undoubtedly proceeded to Tavistock on the west, and thence through the Tamar on into Cornwall, where, I have reason to believe, it has already been observed, but not recognized.

This road was for through traffic, and its course and continuity is such that its identification with the Fosseway is complete.

The assumption of Mr. R. N. Worth, that the trackway briefly noticed by Rowe is none other than this interesting road is thus correct; and the contention of the same gentleman, that what we may call the older Totnes is really the ancient name for the south-western promontory of England, and not merely the town of that name, and that when the old chroniclers spoke of the Fosseway as running from Caithness to Totnes, it was intended to mean from the northern point to some place in western Cornwall.

The late Mr. Davidson, in his paper on Teign Bridge,⁷ conjectures that the ancient road from Exeter westward, was through Chudleigh and over (or through) the Teign at this point, but being found inconvenient, the Roman engineers thought it worth while to effect a lower crossing over the Teign, and thus, amongst other things, get a shorter route to Totnes.

The foundations of a Roman bridge on the site of the present Teign Bridge were discovered on rebuilding in 1815, and thus Mr. Davidson's hypothesis of an older road passing through Chudleigh is confirmed by the existence of the trackway I have attempted to follow and describe.

The total length of the trackway which I have traced across Dartmoor is about eighteen miles.

⁷ *Trans. Devon. Assoc.* xvi. 451.

THE DEVONIAN OF THE WESTERN REGION AND GEOLOGY OF TAVISTOCK.

BY W. A. E. USSHER, F.G.S.

(By Permission of the Director-General of the Geological Survey.)

(Read at Tavistock, August, 1889.)

INTRODUCTION.

REDUCED to its simplest expression, the geology of Tavistock consists of Devonian, Carboniferous, and Granitic rocks. Upon the last mentioned I do not propose to touch in this paper. As to the two great systems of stratified rocks:

“From the Tamar to the granite of Dartmoor, near Tavistock, the difficulty of obtaining a boundary line between the two systems is extreme. If Carbonaceous beds be taken for guides, they will be found far to the southward of where it would seem right to trace the line; if grey argillaceous slates be selected, such as are so common in the lower series, these also fail us, as they are found amid beds which there can be little hesitation in referring to the Upper Carbonaceous system. Again, if we have recourse to the schistose trappean ash, so common in the lower system of Davidstow, St. Clether, Trewen, and Lewannick, this very marked rock also fails us, as we find it in equal abundance among the sandstones, shales, and slates of rocks which may with confidence be referred to the Carbonaceous system of Dunterton, Milton Abbot, Lamerton, and Brent Tor. In fact, the intermixture of equivocal rocks is so considerable that in several places a boundary between the Carbonaceous system on the north, and argillaceous slates on the south, can scarcely be obtained within the distance of a mile. No distinctive organic remains have hitherto been obtained in the neighbourhood of Tavistock to assist the inquiry.

“Under these perplexing circumstances, it being necessary to distinguish the two masses from each other by some kind of boundary on the map, a line has been traced by weighing such

evidence as could be obtained, and deciding upon the most probable course the line may in consequence be supposed to take.

"From the vicinity of Tavistock to that of Holne Chase, near Ashburton, the southern boundary of the Carbonaceous system runs along the edge of the granite of Dartmoor for a distance of about forty-six miles.

"When we proceed to trace the boundary of the rocks under consideration eastward from the granite near Holne along a line separating them from the grauwacke . . . on the south, it is not without considerable surprise that we find them dip upon this line to the southward or south-eastward—a dip which gives them the appearance of passing beneath the grauwacke on the south."¹

This is the geology of the Tavistock district as described by De la Beche fifty years ago.

Much has been done towards its elucidation, in minor points of great special interest, since—as Mr. Rutley's description of Brent Tor, and Mr. Worth's observations on the alteration of the stratified rocks in the vicinity of Dartmoor—but the general stratigraphy of the district remains in pretty much the same aspect as presented by De la Beche in the above quotation. We must, however, except the references to this neighbourhood in the late Dr. Harvey Holl's excellent paper on "The Older Rocks of Devon and Cornwall."²

The object of the following notes is rather to clear the ground for a fresh start, than to attempt a description of the geology of Tavistock in detail. The materials at my disposal are altogether inadequate to unravel the details of the district, yet sufficiently important to forward materially such an enterprise. They consist of random notes made in a few days last autumn in the neighbourhoods of Launceston, Tavistock, and Holne Chase, and of a careful inspection of the cuttings then exposed on the new railway, between Devonport and Saltash Passage, and from near Thorn Point and Beer Ferrers to Tavistock. By themselves these observations would carry very little weight, but they do not stand alone, being made with reference to numerous detailed investigations in the Lower Culm-measures and Devonian rocks in other parts of South Devon, as it was in following up the clues thus obtained that it became desirable to extend the areas of observation to this region.

It is quite useless to attempt the separation of the Culm and Devonian rocks in the Tavistock district without a thorough acquaintance with the Lower Culm-measures. My

¹ Sir H. De la Beche's *Report on the Geology of Cornwall and Devon*, p. 108.

² *Quar. Journ. Geol. Soc.* for April, 1868, pp. 414, 417, &c.

first object is to put on record some new facts. My second is to ventilate some general deductions from matters of fact as to the mode of occurrence of the members of the Devonian system, than which I can find no more plausible explanation.

PART I. OBSERVATIONS.

Devonport and Tavistock Railway.—Between Devonport and Saltash Passage I had the advantage of visiting the cuttings on the new line with Mr. Worth. The interesting association of igneous rocks with the slates in that part of the line I shall merely allude to, as I look forward to a detailed description of them from Mr. Worth, by whom the names applied to the different varieties were supplied. Many of the cuttings were only partially excavated at the time of my visit in November, 1888, and from Saltash Passage to the cutting near Thorn Point the line was not traversed.

At the terminus tunnel, Devonport, indian-red and green slates of the Mutley type are exposed, apparently overlying grey slates.

In Ford cutting a Fault at the south end cuts off the grey slates against a mass of volcanic rocks, consisting of schalsteins, ashy breccia, and harder lavas. These beds are either faulted in two places, or contain a thin band and an irregular mass of slate; they rest upon dark grey quartz-veined slates, and dip toward the south.

In the next cutting (No. 3) greenish slates, red in places, are shown dipping under grey slates.

The cutting beyond Camels Head Bridge shows dark grey slates either overlying or faulted against felsitic rock, associated with volcanic tuffs, in which it may occur as a dyke. The felsitic rock is cleaved in thick laminæ or tabular flakes, a character also observable in felsitic rock in Saltash Passage cutting. The felsitic rock seems to pass into material similar to the schalsteins in Ford cutting, and containing slaty inclusions. The appearance of several volcanic bands in the slates may be due to sharp inverted folds, or to repeating Faults.

In the next cutting (No. 4) very dark grey slates, intersected by thin quartz veins, are exposed.

In Saltash Passage cutting (No. 5) the dark slates are much disturbed, and contain bosses of grey amygdaloidal rock in four places, suggestive of either the impersistence of the igneous masses or the repetition of one or of two bands at the axes of sharp plications, further complicated by oblique

slide Faults or thrusts. In the middle of the cutting a much disturbed mass of rhyolitic rock is also noticeable, and towards the northern end of the section a mass of cleaved felsitic rock overlies slates containing brown schalsteins and other volcanic products.

Proceeding by boat from Saltash to Thorn Point, I landed at Landulph promontory, Neal Point, where are visible grey slates irregularly associated with grey limestones, more or less lenticular, and with limestone nodules. The limestones are veined by calcspar, and are rich in such corals as *Favosites Goldfussi*, *Stromatopora*, *Cyathophyllum*, *Alveolites*, and *Heliolites porosa*. The limestones are irregularly overlain by indian-red and green slates, probably thrust over them by Fault on the west. On the east they occur in thin bands here and there in slates or papery shales, which contain small badly-preserved fossils; with them are associated dark grey or blackish slates, with quartz veins.

These beds are succeeded by indian-red slates. The calcareous series is very thin, and probably forms an inverted anticlinal in the red and green slates, with which its junction is complicated by Fault. That we have here either the upper part, or a much attenuated and probably impersistent representation, of the Middle Devonian limestones of Plymouth and Torquay hardly admits of a doubt.

In the 13th cutting, near Thorn Point, the slates are much disturbed, and apparently associated in two places with contorted masses of blue limestone veined by calcspar, and called "bastard lime" by the ganger. From this to Tavistock no further indications of limestone were met with. In the small cutting west of Beer Ferrers pale grey slates are exposed, in one place apparently forming an inverted anticlinal.

In Stone Farm cutting a Fault marked by a development of quartz separates dark-blue quartz-veined slates from dark-grey slates, with occasional quartz veins; its hade is toward the latter. On the south of Down Farm Viaduct the cutting shows grey slates apparently bent into an inverted synclinal, and intersected by a Fault marked by quartz veinstone.

On the north of Down Farm Viaduct the cuttings are in greenish-grey slates, undulating in wavy lines. In the cutting near Beer Alston crinoid joints were obtained in the slates, which are traversed by an east and west dyke-like mass of decomposed igneous rock, making a sandy soil. Near this mass the slates betray signs of anticlinal and synclinal curvature. This cutting is about seventy-five feet in the highest part. The small cutting on the north of the above is in pale

greenish slates, apparently exposed along their strike, and faulted at the northern extremity of the exposure.

Goldstreet Farm cutting commences in pale greenish and grey slates overlying hard greenish amygdaloidal igneous rock, which is cut off by Fault against Culm-measures, consisting of buff, whitish, and pinkish shales, with intercalated hard even beds (Pftanites) upon blackish even shales. On the north side of the bridge which here spans the line, probably concealing a Fault, we find an irregularly associated series of grey sandstones, shales, and mudstones. The sandstones are more or less micaceous, and partly shaly. These arenaceous beds appear to be higher in the Culm-measures than those on the south side of the bridge; they recall similar beds in that formation between Ipplepen and Newton Abbot, and elsewhere. Near Ashing Farm the Culm-measures are cut off on the north-east by Fault against pale greenish-grey slates, with quartz veins in places. These Devonian slates dip southward, and are exposed nearly along their strike in the three succeeding cuttings; whilst in the fourth there is an appearance of Fault in the vicinity of which the slates undulate.

The next cutting, beyond the road to Stimebur, shows similar slates apparently bent into a complex anticlinal, inverted and attended by a development of quartz.

On the south of Higher Goaten Farm a cutting exposes pale greenish quartz-veined slates, reminding one of the slates of Rame Head and of Morte Point.

Beyond Higher Goaten Farm the next two cuttings are in similar slates, in places containing greenish quartzose vein-stones, and in one spot showing signs of a lode.

The three next cuttings show pale greenish, silvery grey, and bluish slates, in places red-stained on the surfaces, and with local developments of vein quartz. Toward the embankment the slates undulate, and at a spot marked by a quartz vein may be faulted.

North of the above, specimens of Elvan are visible at Shillamill Tunnel mouth, the slates excavated in the tunnel being traversed by an Elvan.

On the north side of the tunnel there are two small cuttings in grey slates, with a hard band interpenetrated by quartz, apparently near a Fault; in the smaller cutting near the viaduct an Elvan is visible.

On the north of the viaduct grey slates, with ferruginous surface-staining, are exposed in two cuttings, being apparently intersected by a Fault in the larger of the two. The next cutting commences in dark (weathering light) grey slaty

shales, with thin quartz veins (possibly Culm-measures), separated by an overhanging Fault marked by white mud (crushed slate) from grey slates (Devonian).

In the next cutting the grey slates contain a yellow mass of crushed rock, probably marking a Fault; they are cut off at the north end of the cutting by a Fault with normal hade, and marked by black mud, from even grey slates or shales, with bed bands of quartz. The last-mentioned beds are apparently Culm-measures; they are exposed in the next cutting, in parts of which they are blackish. This brings us to Tavistock Viaduct, beyond which I have not observed the line.

TAVISTOCK TO BRENT TOR.

In the road cuttings in the south-west part of Tavistock dark grey shales with thin quartz veins are exposed, also at the G.W.R. station, where they contain a faulted mass of hard grey quartz-veined grit. These beds are evidently Culm. They are softer and less glazed than the Killas, and on the north of the station contain calcareous beds and veins of carbonate of lime. The ash beds between Brent Tor and Tavistock are probably intercalated in the Culm-measures, and due to local vulcanicity, which has produced similar effects in the Lower Culm-measures near Ashton, north of Chudleigh. On Heathfield, just south of Brent Tor, I noticed surface fragments of buff shale, similar to that associated with the *Posidonomya* horizon in the Lower Culm-measures at Brimley, near Bovey Tracey.

BRENT TOR TO CORYTON.

Near the Brent Tor Inn the beds consist of buff slates or shales dipping northward, as shown on De la Beche's map. Their character is too indefinite to say from a cursory inspection to which of the two systems they belong. On Rowden Down, to the north, porcellanized beds occur, which represent the Pftanites (Coddon Hill beds) of the Lower Culm Measures.

North-west of Rowden Down, at West Litton, a small quarry exhibits dark grey slates, containing *Spirifer Urei* in comparative abundance. These beds I regard as Upper Devonian, brought up in the Culm Measures by fault or fold, as *Spirifer Urei* is not found in the Lower Culm-measures of Devon, whilst in the Pilton beds of North Devon it is common enough. I have not traced this band of Devonian, and am unable to say whether it crosses Holl's

line of section—"from Mill Hill Quarry, through Lamerton, Chillaton, and Leigh Down, to Stowford."²

The above observations tend to carry the boundary of the Culm-measures about two miles to the south of the position adopted for it on De la Beche's map; and this affords independent corroboration of Holl's boundary in the line of section above referred to, which is parallel to my traverse.

LIFTON.

Near Lifton station a quarry exposes dark grey limestone, with calcspar veins, under dark bluish-grey shales, which are overlain by buff and grey papery shales, apparently along a thrust Fault, breaking an inverted synclinal.

Near Woolaton, west of Lifton, a long quarry affords a fine section of dark bluish-grey distinctly-bedded limestones, under buff and whitish papery shales, in places associated with thin hard beds (Pftanite). The dip is N. 10° W. at 25°. In the westernmost part of the quarry the buff shales pass into blackish shales, in which traces of *Posidonomya Bechei* were observed. The limestone beds are intercalated with these dark shales, in which they occur imperpersistently. They are veined with calcspar, and afforded no traces of fossils. The beds present a zig-zag appearance from small folds, probably accompanied by small thrust Faults. In the wood between Park Town and Lifton, midway between the afore-mentioned quarries, the characteristic Pftanites (Coddon Hill beds) are exposed in a small quarry. They consist of thin even beds of chert, with grey and buff surfaces, and dip S. 35° E. at 25°. They are overlain by yellowish-brown conglomeratic beds, intersected by numerous horizontal joints, and resembling rocks in the Culm series at Ramsleigh, near Newton Abbot.

LAUNCESTON.

At Launceston station a quarry, about 80 feet in height, shows irregular bluish slaty shale, the laminæ being often so closely welded as to permit the rock to be quarried in very large blocks. With these are associated grey, brown-weathered shales, with buff sandy nodules (? decomposed limestone). The beds are much contorted. The cliff above the station consists mainly of buff and grey broken arenaceous shales, with harder bands, apparently disturbed and affected by small thrust Faults.

² *Quar. Journ. Geol. Soc.* April, 1868, p. 409.

BETWEEN LAUNCESTON AND SOUTH PETHERWIN.

A large slate quarry, south of Tresmarrow, exhibits dark grey slaty shales, in places quarried in great tabular masses, sometimes five feet square, through the cohesion of the laminæ. A few hard, even beds, resembling Pftanite, occur in the slates. The only organic remains found were faint calamite markings. The beds are nearly horizontal, and are exposed to a depth of about sixty feet. South of this quarry the road cuttings show more or less arenaceous buff and grey shales, with occasional faint plant markings. These beds are probably the same as those in the cliff above the station, and would appear to be above the dark slaty shales in the adjacent quarry.

At Does House, unless the junction with the Devonian is a Fault, the basement Culm-measures consist of dark grey slaty shales, succeeded by grey slaty shales, with traces of crinoids.

In the above traverse no signs of the Pftanites were encountered; but near Bad Ash, south of Launceston, surface fragments were noticed, containing *Goniatites crenistria*, and *Posidonomya*, suggesting the presence of the Waddon Barton horizon in the Chudleigh district. A little further south hard, even bluish-grey slaty shales, dipping south, are exposed in a quarry. North of Bad Ash, near Launceston, a volcanic band occurs in the Culm. The Pftanites, or Coddon Hill beds, are, however, well represented in the neighbourhood.

At a mile east from South Petherwin Church, in the area coloured Devonian on De la Beche's map, there is a quarry in typical Pftanites, quarried, as in Tawstock Park, near Barnstaple, for road metal. The beds are much flexured, notably by an inverted synclinal, striking nearly north and south. South of Hardow Down, the lane toward Laburnick exhibits the following interesting succession: Buff-brown and grey thin even shales, containing *Posidonomya Bechei*, and resembling the shales associated with the Westleigh Limestones. These beds seem to rest on shales with grit exposed at a farm by the lane. The lane traverses a stream valley, on the eastern slopes of which we encounter very hard, thin, even beds (? Pftanite), containing *Goniatites crenistria* and *Orthoceras*. By their dip these beds would seem to underlie those on the west side of the valley. In a quarry by the high road near Newton, north-east of Hardow Hill, which is shown on the old one-inch map, undulating beds of Pftanite are exposed.

SOUTH PETHERWIN. DEVONIAN.

The quarries of this classical locality commence on the south side of the stream valley, at about half a mile north of the village, and from thence the calcareous slates can be readily traced on the slope for a mile eastward.

The limestones are lenticular bands, often decomposed to a soft brown fossiliferous powdery rock, as in the Pilton beds of North Devon and West Somerset. The slates are often calcareous, more or less irregular, and shaly.

In the overgrown plantation quarry, near the stream south of Does House, about 25 feet is visible in section. The fossils obtained from this quarry are: *Spirifer Verneuili*, common; *Spirifer Urei*; *Rhynchonella pleurodon*, and *Athyris*. Higher up on the slope, and further east, a quarry in grey and greenish slaty shales afforded the following forms: *Spirifer Verneuili*; *Rhynchonella pleurodon* (?); *R. letiensis*; *Pterinea*; *Cerriopora gracilis*.

At 50 chains south of Bad Ash a large quarry shows grey and pale greenish slates, partly calcareous, and containing irregular lenticles or impersistent beds of limestone, dipping northward, and therefore in all probability faulted against the Culm-measures, which in the quarry on the north side of the valley exhibit a southerly dip. The following fossils were obtained: *Rhynchonella letiensis*; *Spirifer Urei* (?); *Orthoceras*; *Fenestella*.

G. W. R. TAVISTOCK TO PLYMOUTH.

The railway cuttings on this line deserve close attention. Their appearance from the train suggests the presence of Devonian at Whitchurch and Horrabridge; of Culm-measures between Horrabridge and Bickleigh; of both Culm and Devonian between Bickleigh and Marsh Mills; and from Marsh Mills to Mutley of Devonian, indian-red and greenish slates being exposed at the latter station.

ASHBURTON AND HOLNE.

In the course of a couple of very pleasant and instructive days spent with Mr. Amery at Druid, my kind host exerted himself in every way to further my object of obtaining some notion of the geology of the neighbourhood.

In the vicinity of Dartmoor the Culm-measures are much indurated, as well from proximity to the Granite as from associated vein stuff. On the north of Awsewell Crags, which

consist of hard grey rock, interpenetrated by quartz veins, they are spotted and banded, not far from the Granite.

Just north of their junction, with the Devonian slates at Higher Awsewell, near Druid, the Culm-measures contain buff and whitish shales, reminding one of the beds in this series at Brimley, near Bovey Tracey.

The Culm and Devonian junction runs from near Druid Cottage, by Higher Awsewell, to Holne Bridge; thence following the bend in the river Dart below North Park Wood. It is probably a Fault.

Under the old river gravel patch, described by me in *Trans. Devon. Assoc.*, 1876, on Lenthill, several large examples of *Spirifer Verneuili* were obtained in the Devonian slates.

On the east side of Druid the surface of a field is strewn with pieces of slate, amongst which are many thick greenish and buff fossiliferous fragments, which seem to occur in lenticles in the slates after the manner of the Petherwin limestone.

In these fragments, and from specimens furnished me by Mr. Amery from excavations at Druid, I obtained the following, kindly identified for me by Mons. C. Barrois, and Professor Gosselet: *Spirifer Verneuili*, common; *Streptorhynchus consimilis*; *Orthis arcuata*, common; *Rhynchonella letiensis*; *Chonetes hardrensis*.

The occurrence of *Rhynchonella letiensis* both here and at South Petherwin is worthy of note. In the Ardennes M. Gosselet gives this fossil a zonal value in the Fammenien (or upper part of the Upper Devonian).⁴ I quote the following translated from that author⁵ as being curiously à propos.

"The grit of Cerfontaine is surmounted at Wattisart by green slates full of limestone nodules; these nodules have often been dissolved by waters charged with carbonic acid; they have disappeared, and in their place there only remains a cavity. The slates with calcareous nodules are well shown at Choisies at Pont-de-Bêtes; they are there associated with greenish shimmering slates and psammities much more slaty than those which accompany the grit of Cerfontaine. The fossils here are rare; however, I have found *Spirifer Verneuili* and *Rhynchonella letiensis*."

To return to Druid, the slates associated with the fossiliferous nodules, and occurring to the south of them, are frequently greenish and glazed on the surface, but with the exception of a few crinoid remains, they appear to be rather

⁴ See *Annales de la Soc. Geol. du Nord*. t. viii. p. 196.

⁵ *Ibid.* t. vii. p. 208.

unfossiliferous. These beds are cut off by fault against the Ashburton limestone with its overlying slates and schalsteins, described by my late lamented friend Mr. Champernowne, who regarded the limestone as Middle Devonian, a determination with which I agree.⁶ The slates and schalsteins overlying the limestone are probably represented by the slates and associated volcanic beds in the railway cuttings between Devonport and Saltash Passage, so that, correlating the Ashburton and Landulph Point limestones, we have in each region a series of slates with volcanic beds in the lower portion, and fossiliferous bands in the higher, at at Druid and Petherwin, but probably cut out by the faults shown in the railway cuttings near Tavistock.

I forbear to mention other points of special interest as to the relations and mode of occurrence of Upper Devonian beds in South Devon, as the details are reserved for Geological Survey publication, the localities being in sheet 22 of the ordnance map.

PART II. DEDUCTIONS.

Culm-measures.—As regards the Lower Culm-measures it will be seen from the foregoing notes that we have in the Launceston and Tavistock districts horizons which are clearly marked both in North Devon, elsewhere in South Devon, and on the Continent, and that fossils occur in them of the same type as those found in the Chudleigh district. The Pftanites, or Coddon Hill beds, as in North Devon and elsewhere, often give place to less consolidated materials, so that no conclusions, as to presence of Faults or of unconformity, can be based on their local absence.

Upper Devonian.—As to the Petherwin beds, whilst recognizing in them the equivalents, to some extent, of the Pilton beds and Fammenien, it would appear, as supposed by Dr. Holl, if their boundary be a natural one, that there are signs of unconformability. The observations of actual exposures here given in detail, however, show the prevalence of Faults and flexures in the district, and point to the probability of these appearances of discordance or hiatus being due to them. Again, the occurrence of *Rhynchonella letiensis*, whilst it undoubtedly favours the correlation of the South Petherwin and Druid fossiliferous beds, does not necessarily prove an exact correspondence between them and the horizon characterized by that fossil in the Fammenien. M. Gosselet

⁶ See *Geol. Mag.* Dec. II. viii. 410-416.

has divided the Fammenien into four zones, in descending order as follows (*Ibid.* T. xiv. p. 131):

1. Limestones and slates of Etræungt, with *Spirifer distans*.
2. Slates of Sains, with *Rhynchonella letiensis*.
3. Slates of Mariembourg, with *Rhynchonella Dumonti*.
4. Slates of Senzeilles, with *Rhynchonella Omalinsi*.

It does not follow from the absence of a representative of the *Spirifer distans* zone that there is an unconformity in South Devon, as *Rhynchonella letiensis* may have a higher range in Devon, or the representative of the highest zone may be cut out by Fault at Petherwin. The latter hypothesis is strengthened if I am right in placing the slates of West Litton with *Spirifer Urei* in the Devonian series.

The comparatively unfossiliferous slates below the Petherwin and Druid horizons may represent the lower zones of the Fammenien.

These questions could only be settled by an exhaustive survey, which, however, would not be likely to disprove the correlation of the South Petherwin and Druid beds. Dr. Holl (*op. cit.* 452) considered the Petherwin beds more closely connected with Middle than with Upper Devonian by their fossils. He further justified his views as to an unconformity between the Culm and Devonian systems, on the ground that "the slate rocks which pass under the Carbonaceous series on the north are not the same as those that rise from beneath them on the south," whilst the opposite sides of the Culm-measure trough appear symmetrical.

That there may have been gaps of unrepresented time in parts of the area, through contemporaneous erosion, accounting for the absence of the highest beds of the Devonian, I quite admit; but as far as conditions are concerned, the greatest natural break in the Devono-Carboniferous series is that which separates the marine lower Culm-measures from the plant-bearing sandstones and shales above them; yet where their relations are observable, there is no appearance of unconformability, notwithstanding the local presence of conglomerate in the sandstones.

As to the reliance to be placed on the absence of corresponding characters in the Upper Devonian of North and South Devon, there is not much similarity in any of the divisions between these regions. The discrepancies may be ascribed with some show of certainty to the different geographical conditions under which the deposits were forming in each area.

Leaving the vexed question of unconformability, I would wish to claim for the Devonian rocks of Somerset, Devon, and Cornwall, a variability which, whilst it materially adds to the difficulties of classification, affords further interest to the enquiry.

The English Devonian rocks are divisible into three typical regions, whose main characteristics are as follows:

Northern type.—Prevalence of grits and psammites in the slates, very local occurrence of limestone, and development of extensive arenaceous deposits.

Southern type.—Considerable local development of limestone, probably in many cases through coral growth; a long period of vulcanicity, locally predominant, but generally sporadic. Arenaceous materials confined to the lower beds (Warberry, Lincombe, Cockington, Staddon, &c.)

Western type.—West of Dartmoor. Great preponderance of muddy sedimentation. The slates of this region being sparingly fossiliferous, much disturbed, and mineralized, and also affected by igneous intrusions, present in the Killas of Cornwall so generally homogeneous an aspect that we hail with pleasure the very occasional presence of calcareous materials, local intercalations of volcanic products, or even distinct colour-markings, to which we are inclined to assign more value than we should probably give to such indications elsewhere.

In the Looe beds, as in South Devon, the development of grit is confined to the Lower Devonian beds.

The northern region exhibits the characteristics of proximity to shore-line and shoaling conditions. The southern type denotes changing local conditions, naturally giving rise to considerable variability in deposition, and to lithological impersistence on a large scale.

The western region seems to have experienced the most uniform conditions. Uninterrupted muddy sedimentation, perhaps in deeper water, and not often congenial to the existence of an abundant fauna.

Such observations as that recorded at Landulph Point, on the River Tamar, derive additional importance from the absence of marked horizons. The calcareous beds there exposed appear to be the lithological equivalents of the Middle Devonian limestone, and to be subordinate to the indian-red and green slates of Devonport and Mutley. These variegated slates seem to pass upward into pale greenish and grey slates through a series of grey and bluish

There is no hard and fast line between *e, f, g, h, i*; the distinctive characters, except in the case of the lower variegated beds in (*i*), are neither pronounced nor uniform; the slates in fact frequently, losing all distinctive characters, occur as typical grey, brown, and red-stained Killas.

We have then from the Middle Devonian bed (*j*) a nearly uniform series of slates in which, until we arrive at the fossiliferous zone of their uppermost portion, no distinction has been met with by which a subdivision into Frasnian beneath and Fammenien above could be effected, nor is it possible to say whether their lower portion may not be in part representative of Middle Devonian, which series in parts of South Devon is made up almost entirely of volcanic beds.

In respect of the absence of a definite boundary corresponding to that between the Frasnian and Fammenien in the Belgian Upper Devonian, and of the absence of a clearly marked base to the Upper Devonian, the western region resembles the northern, rather than the southern Devonian area; for in the latter characteristic Frasnian fossils have been obtained.

I have placed the slates of West Litton with *Spirifer Urei* at the top of the Devonian series, their isolated position not enabling me, without a more careful exploration of their surroundings, to correlate them with the Petherwin beds or their subordinate slates.

It will be seen that between Devonport and Launceston the oldest strata exposed are Middle Devonian; to study the succession of the lower beds we should have to visit the Lower Devonian grits of Staddon and Maker, and then proceed along the coast to Looe.

In a paper communicated to the Royal Geological Society of Cornwall, I have given the succession on this part of the coast, confessing my inability to assign a definite position to the Staddon and Maker grits. Subsequently I correlated them with the Cockington beds of the Torquay and Paignton area, which were at that time regarded by Mr. Champernowne and myself as Upper Devonian.⁷ Since then I have found Lower Devonian fossils in the Cockington beds, and so revert to the first alternative suggested in the paper to the Cornish Society, assigning a Lower Devonian age to the Maker and Staddon grits.

⁷ *Vide Proc. Geologists' Assoc.* vol. viii. No. 8.

ON THE
METAMORPHIC AND ASSOCIATED ROCKS OF THE
EXTREME SOUTH OF DEVONSHIRE.

PART III.

BY ALEXANDER SOMERVAIL.

(Read at Tavistock, August, 1889.)

I. *Introduction.*

IN my last paper on this subject, printed in our *Transactions* for 1888, I drew attention to the probability of the rocks therein described as "chloritic," which form portions of the area immediately to the north and south of the Start as being highly altered dolerites or diabases,¹ and that these might be the equivalents of the less altered interbedded igneous rocks occurring on the north side of the great synclinal axis near Dartmouth.

These latter rocks I was then aware had an extension still further northwards than I then mentioned, as I had previously traced them nearly to Scabbacombe Sands; but I felt that I should like to re-examine the whole group again, with the view of more completely identifying it in its petrological and stratigraphical relations with what I believed to be the corresponding one on the south side of the syncline. I shall therefore first describe the igneous and associated rocks on the north side of this axis, as from these, I think, have been formed the crystalline schists on the southern side.

II. *Portion of Section on North Side of Syncline.*

The portion of the section I mean to describe lies between Scabbacombe Sands and a little way south of Stoke Fleming.

¹ In my last paper I should have drawn attention to the fact that Professor Bonney calls attention to this subject when describing the chlorite rocks near Prawle Point.—*Quar. Jour. Geol. Soc.* xl. 6.

It is somewhat singular that Sedgwick and Murchison,² in their examination and description of these rocks, should have failed to note these of igneous origin. Their own words are, "Here, however, we saw no traces of trappean rocks." If by this statement they simply meant an absence of intrusive ones, then they are not very far wrong, as the igneous rocks occurring here are strictly contemporaneous ones, with perhaps one or two exceptions. J. Beete Jukes, F.R.S.,³ however, noted these igneous rocks near Stoke Fleming and Dartmouth Dockyard, and speaks of them as beds of ash, and others as intrusive.

The whole series of these igneous rocks, and their associated sedimentaries extending from near Scabbacombe to Redlap, may be divided into dolerites, ashes, ashy-slates, and slates occasionally separating the aforesaid.

The dolerites or diabase-like rocks which occur on two principal horizons, much resemble each other in their mineral aspects, texture, and colour, the latter being of a greenish-grey, the green mineral being epidote, occurring as an alteration product of the augite. Chlorite may also be present, but the former mineral is the prevailing one.

These rocks are in part massive and in part schistose, and where the latter structure predominates, they graduate into the ashy or schalstein-like deposits so imperceptibly that it is impossible to separate them.

The ashes in their turn differ much from each other in composition, texture, and colour, but most of them contain a greenish-yellow mineral in a scaly or platy form, which, I think, is chlorite. In their turn these pass up into ashy slates, which form a very marked feature in the section.

These ashy slates in large slabs have a very beautiful appearance from the combination of colours they display, and the irregular banded arrangement of the fine mineral constituents which form them. The base is pale green, the bands are pinkish, reddish, and a graphite-like black, with veins of white and delicately-tinted quartz traversing the whole. All these colours are further enhanced by the glossy nature of the slate. Large slabs of these slates among others have been used to ornament the walks at Dartmouth Harbour, and are well worth looking at.

I cannot pass over the dark graphite-looking mineral contained in these ashy slates without remarking that a similar, if not the same, mineral presents itself again and again at

² *Trans. Geol. Soc.* 2nd series, v. 661.

³ Paper read before the Royal Geol. Soc. of Ireland, 13th Nov., 1867, p. 13.

different horizons in the metamorphic series near the Start, and that this mineral from the latter locality received the special attention of Professor Bonney.⁴

The stratigraphical relations of these igneous rocks just reviewed with certain slaty partings are as follows:

Between the south end of Scabbacombe Sands and Ivy Cove a series of diabase-dolerites and ashes in line of strike inland re-appearing again at Dartmouth Dockyard.

From Ivy Cove southwards, striking through Kingswear and Dartmouth, a considerable thickness of various coloured slates.

Above these exposed at Pudcombe Cove are ashy slates, which are also well seen on the beach below Dartmouth Castle.

A little further south, on the Kingswear side at Old Mill Bay and Forward Cove, is another series of these diabases or dolerites which also form the outlying islets, the Cat and Mew Stones, and then stretch westwards to Little Dartmouth and Redlap. Associated with these traps are also beds of ash passing into ashy slates.

South of Stoke Fleming glossy slates predominate; but a very curious schalstein-like tuff, with numerous crystals of flesh-coloured calcspar, occurs in the cliff a little way south of Penlee House.

To summarise these rocks in as few words as possible—they are simply two series of diabases separated by ashes, ashy slates, and slates.

III. *Portion of Section on South Side of Syncline.*

Passing over the slaty portion of this section, which begins near Torcross with a reverse dip—viz., north—to form the syncline or basin-shaped curve so frequently referred to, we find the slates on the north side of the Bickerton Valley giving place to beds of a more quartzose nature, with traces of chlorite, passing downwards into the chlorite rock, which, although not seen at the mouth of the valley by reason of the long stretch of sand without any exposure of rock, is yet traceable from flank to flank a little way up the valley.

Below these chlorite rocks, or altered diabases or dolerites, is a series of schistose rocks, which extend south of Start Point to its southern horn, with a growing increase in their crumplings, and the amount of mica they contain as they pass southwards.

⁴ *Quar. Jour. Geol. Soc.* xl. 14.

These rocks—although one collective term, mica-schist, is applied to them—are, nevertheless, found on examination to have consisted originally of very different materials. Some are little more than slightly altered slates, others ashy slates, and some resembling ashes, the latter containing chlorite in its scaly or platy form; while others contain the dark, lustrous, graphite-looking mineral we have already referred to.

South of a line almost midway between the Start and Prawle, the mica-schists become once more interrupted by beds of chlorite rock, of which there are several which continue to Prawle Point; the upper portion of the Point being formed by the chlorite rock, and the lower portion by alternating beds of this rock and mica-schist.

There is one feature about the mica-schists in this district which makes it difficult or impossible to separate them sharply from the chlorite rocks; that is, the presence of chloritic matter in lesser or greater abundance.

To briefly summarize the rocks of this section, as I did the last. It consists of two pretty widely separated horizons of chlorite rocks, with intervening argillaceous mica-schists, and mica-schists of the more normal type; also chloritic mica-schists, chlorite or epidote in one form or another being diffused in greater or smaller quantity throughout the whole.

What these mica-schists and chloritic mica-schists originally represented I cannot positively affirm. I can only venture the opinion, that they may have been ashes and ashy slates, such as we find in the northern rocks, already described.

IV. *Correlation of the North and South Sections.*

Under this head I feel inclined to make only a few general remarks, as I do not desire to draw any undue or strained comparisons between the two sections we have had under consideration.

There is certainly in the north section two distinct series of these diabase or dolerite-like rocks, widely separated from each other by a series of ashes, ashy slates, and slates, all three of which vary considerably in composition—some very quartzose, but all characterized by the presence of chloritic or allied mineral matter.

In the south section we also find two distinct series of the chlorite rocks, with a corresponding separation of argillaceous mica-schists, mica-schists, and chloritic mica-schists, which may be the equivalents of the aforesaid three others.

On making a comparison between the diabase or dolerite rocks of the north with the chlorite rocks of the south, they do not quite agree. The original minerals in the latter seem to have undergone much more change. Secondary products are much more largely represented, especially the chloritic or epidotic mineral, which gives these rocks their distinguishing colour. The epidote in the northern rocks occurs pretty largely in a granular and crystalline form, while in the southern ones it exists in a highly crushed or powdered condition; and this is exactly what we should naturally expect to find.

On comparing the intervening groups with each other, the development of mica in the southern section is the great distinguishing feature. The difference almost wholly consists in the addition of this secondary product; while the bases of the rocks are or are nearly the same in both cases.

Besides this mineral distinction there is, however, also a mechanical one; viz., the much greater corrugation and crushing presented by the southern series. This fact of itself explains the formation of the mica, which steadily increases with the amount and intensity of the corrugation.

V. Concluding Remarks.

Before concluding what I feel to be rather a meagre paper, I should like to mention that I have had the privilege of examining a large series of igneous rocks from the Ashsprington beds of South Devon, the exact horizon of which in the Devonian system is not yet absolutely certain. These rocks (what I have seen) do not resemble the Dartmouth series, neither do they resemble the chlorite and associated rocks of the extreme south, but the rocks of each of these sections resemble each other much more than does the Ashsprington series either of them.

I have already pointed out that there is a difference between the dolerite-like rocks of the north and the chlorite rocks of the south sections, a difference I have no desire to evade in any way; but this difference, I venture to think, may be consistently accounted for by the greater dynamic force exerted in the southern area, and the accompanying chemical changes it would doubtless produce.

As regards the likeness of the two sections in their rocks, and in their stratigraphical relations to each other, it almost seems more than a mere coincidence; and what is very curious—if they be not related—is the fact that the thickness

or space occupied by each on the map is the same; that is, on the one hand, from a point south of Scabbacombe to near Redlap or Stoke Fleming, and on the other, from the Bickerton Valley to Prawle Point.

I would conclude by saying that it is my conviction that, if any portion of the Devonian, it is what I regard as the counter-portion of that series of igneous and associated rocks which occur between Scabbacombe Sands and Stoke Fleming, that has been metamorphosed into the crystalline schists now forming the extreme south of Devonshire.

Addenda.

After this paper had been finished in its present form, I found in the *Geological Magazine* for June 1889, p. 265, an article by Miss C. A. Raisin, B.Sc., replying to portions of my former paper—Part II. The objections to my views raised in the said article may be resolved under three heads:

1. The non-mineral identity of the north and south group of rocks.
2. The inference of the distinct and greater age of the southern group, drawn from the banded and cleavage structures.
3. The question as to the northern boundary of the chlorite rock, or the alleged line of fault.

1. Under this head Miss Raisin bases her argument for the distinctness of the two group of rocks on the absence of augite and the rarity of felspar in the chlorite rocks of the south, and on the comparative abundance of these two minerals in the dolerites of the north, and also on the rarity of chlorite in these rocks.

It is admitted, however, that these northern rocks are in a condition of transformation, that some of the felspar has been completely decomposed, and some of the augite transformed.

Keeping the bearing of these several facts in our memories, let us glance at the descriptions of the mineral constituents forming the chlorite rocks, as given by Professor Bonney and Miss Raisin.

Professor Bonney says that the most abundant mineral is a species of the chloritic group. He also mentions epidote, and the possible occurrence of both hornblende and orthoclase.

Miss Raisin records the occurrence of epidote "in numerous

small grains," also felspar, and its replacement by a secondary mineral, as well as hornblende in larger quantity than found by Professor Bonney.

It is I think perfectly clear from both of these descriptions that these southern chlorite rocks are highly-altered igneous ones of the greenstone kind, and that the only distinctions to be drawn between them—whether they are the same or not—and the northern igneous group, is the much more advanced stage of the alteration of their original constituents into secondary products.

In the southern group the original augite is doubtless now represented by the chlorite, the epidote, and what very little hornblende now exists. Felspar does occur, but is largely replaced by other secondary minerals.

In the northern group we read a similar history of mineral change, the same in kind though less in degree. It is quite true that all rocks of the greenstone type pass through much the same series of changes, and that this of itself is no proof of the unity of separated groups of similar rocks, but in the present case there does appear something like other strong collateral evidence not to be overlooked.

2. Under this head I state Miss Raisin's proposition in her own words. "As pointed out by Professor Bonney, the chlorite-schist exhibits at places not only a well-defined mineral banding, but also a cleavage cutting transversely across it, which appears to be in close relation with the general cleavage of Devonshire. If, therefore, pressure metamorphism be invoked to account for the origin of the chlorite-schist and its banding, the force must be relegated to an earlier period, and thus the rocks affected by it, even if originally igneous, cannot be of Devonian age."

This inference of Miss Raisin's is of course deduced from the supposed pressure origin of the banding, but if accounted for on other grounds, it becomes invalid. Professor Bonney himself is of opinion that it is due to sedimentation.⁵ In my own opinion, the little and indecisive banding there is, in the case of the presumed altered diabbases or dolerites, is due to segregation while in a plastic state, and not to subsequent causes, and in the case of ashes, due to deposition. There is no evidence that I am aware of to show that the rocks south of the alleged fault have been subjected to two distinct movements, while only one can be traced in those north of it. The cleavage system or structure affects the whole with something like persistent regularity.

⁵ I have inferred this from reading page 6 *Quar. Jour. Geo. Soc.* vol. xl.

3. As regards the boundary of the chlorite rock, Miss Raisin generously admits its occurrence further north than it had been previously traced, but says, "It is to be regretted, however, that Mr. Somervail does not withdraw his former untenable assertion, but attempts to renew it by confusing together the correct indication of the boundary given by Professor Bonney on the coast, and any slight modification I have to make in the direction I traced inland. The position on the coast would not be affected by the occurrence of the chloritic schist south of the valley, nor by this chloritic schist north of the valley. The hypothesis of a straight east-to-west line for the fault is quite gratuitous, since no one attempts to draw such."

In reply to these points, I fear there is confusion somewhere. In my first paper, page 6, I simply stated the occurrence of the chlorite rock on the north side of Professor Bonney's boundary or fault; and in my second paper, pages 1 and 3, its position still further north. I would gladly withdraw from any error into which I may have fallen, or from any misrepresentation I have unconsciously made as to the relative relations or positions of these rocks; but the chlorite rocks will still remain on the north side of Professor Bonney's fault or first indication of the "true schists." However further north these former rocks may be yet carried, the boundary or fault must of course be carried along with them, which will leave the question in the opinion of some just where it was before. This is, I suspect, the point, and I do not object to it. As for the fault following a straight line, I never urged it.

Miss Raisin in her paper also refers to the unreasonableness of my view, as to the chlorite rocks of the north side of the metamorphic series forming a buffer in checking the northward spread of the metamorphism.

This opinion of mine I did not attach much importance to at the time, and I might have done well to have cancelled it it before printing, as I am inclined to lay much more stress on the nature of the rocks acted on by the dynamic agency; those rocks of igneous and partial igneous origin being much more easily, in my opinion, converted into crystalline schists than the ordinary slates, which set in immediately to the north of the others.

NOTES ON THE SUBMARINE GEOLOGY OF THE ENGLISH CHANNEL OFF THE COAST OF SOUTH DEVON.

PART V. (CONCLUSION).

BY ARTHUR R. HUNT, M.A., F.L.S., F.G.S.

(Read at Tavistock, August, 1889.)

It is more than ten years ago that, in October, 1878, Mr. W. M. Baynes informed me that the crew of his trawler, the *Pelican*, had taken a large stone on the Salcombe fishing grounds, and that it was then lying on board the vessel at Brixham awaiting my inspection. Since then some forty additional stones, or hand specimens, have been landed, affording material for just half a dozen little papers for the *Transactions* of our Association. On Saturday, March 2nd, 1889, the *Pelican* passed out of the service of Mr. Baynes, and, I may add, of science, and thereby brought the apparently endless series of "Notes on the Submarine Geology of the English Channel" to an abrupt termination, by cutting off supplies at their source.

Now that it is all over, it may not be considered out of place to review the work done by this industrious fishing vessel in the cause of Geology. It may not be very much; but the information available is very limited, and we must be satisfied with what we can get, even should it fall short of what we might desire.

I cannot recall a time, since my interest was first excited in geology, when I have not been conscious of an air of mystery hanging over the "metamorphic rocks" of the Bolt and Prawle district, and that geologists were in doubt whether to consider these rocks merely altered Devonian slates, or of a more venerable antiquity.

In 1872 the boatman in charge of my little cutter, in which I used to cruise in Torbay, was an old Brixham fisherman, Samuel Stockman, a man who had been all his life trawling or dredging, and knew the bottom of the waters of Torbay and the Channel as well as most men knew the top. When Stockman mentioned anything of particular interest, I was in the habit of jotting it down in my dredging note-book. On March 13th he informed me that two or three miles off the Bolt the ground was rough with granite and other stones (small pieces); and that, about twenty miles south of the Start, the trawlers had "oftentimes" to collect crews to haul the trawls, owing to the blocks of rounded granite—"proper granite, as round sometimes as an apple, and half a ton in weight, all that;" and that the trawls, when alongside, would sometimes break away from the weight of the stones. The ground over which the stones were found extended, according to Stockman, from south of the Start to south of the Eddystone, and to twenty-five miles off the English land. Pointing to a piece of greenstone, which happened to be on board my boat, Stockman remarked, "I have seen blue granite like that one there, and I have seen a lighter sort."

This note lay unproductive for more than five years, until the Kingsbridge meeting of our Association, in 1877, when Mr. Pengelly, in one of his papers, incidentally referred to the "highly metamorphosed condition of the rocks extending from the Start Point to the Bolt Tail," and alluded to the theory of Dr. Harvey Holl, that their metamorphosis might be due to the proximity of granite.

This was very *à propos*. While geologists had surmised the existence of granite near the Bolt, Stockman had asserted that it was actually to be found under the adjacent waters of the Channel.

In the following year Mr. W. M. Baynes, having built a trawler at Brixham, kindly interested himself in the question of the Salcombe stones, with the result that on Saturday, October 5th, 1878, he gave me the welcome information that his skipper had one of the stones on board his vessel, and would keep it until the following Monday, to give me an opportunity of seeing it. Accordingly on that day I proceeded to Brixham; arranged (on behalf of the Torquay Natural History Society) for the vessel to convey the stone to Torquay; and within two hours I saw it safely deposited in the museum of that Society. On the way thither it was placed on the weighbridge, and its weight ascertained to be $9\frac{1}{4}$ cwt.

In the following summer I read a paper, at the Ilfracombe

meeting of this Association, entitled "On a Block of Granite from the Salcombe Fishing Grounds," Mr. Pengelly immediately following with "The Metamorphosis of the Rocks extending from Hope Cove to Start Bay, South Devon." In the latter paper Mr. Pengelly made frequent reference to mine, the MS. having been placed at his disposal previous to the meeting.

Towards the close of his paper, Mr. Pengelly, after reviewing the facts relating to the trawled block, summed up the evidence as follows:—"The block was part of a granite formation in situ at the bottom of the Channel, where, from independent and undoubted facts, it had been concluded, before the block was met with, that such a formation existed, and that such masses might probably be found:" and in the concluding paragraph pointed out how the hypothesis of a submarine granitoid formation accounts for "the northerly dip, as well as the metamorphosis, of the Start and Bolt schists; for the gneissic and perhaps granitic character of the Eddystone rocks; for the block of granite caught by the trawler in October, 1878; for the blocks of the same kind of rock lying beneath the cliffs east of the Prawle; for the crowd of granitoid pebbles immediately east of the river Erme; and it leaves outstanding no unexplained fact."

Such then was the latest utterance of Science on the problem of the Bolt and Prawle schists in 1879, the author having previously shown cause for the belief that the metamorphic schists "probably amongst the most recent Devonian deposits in South Devon," had suffered their disturbance and transformation in post-Devonian times.¹

Two years previously, in 1877, Professor Bonney had expressed the following opinions respecting the age of the rocks of the Lizard Peninsula; viz.,

(1) "The sedimentary rocks of the Lizard peninsula are probably about Lower-Devonian age."

(2) "The great granite masses further north are probably late Carboniferous, or at any rate pre-Triassic."

(3) "Possibly the dark traps may . . . be of Triassic age . . . it is possible that these veins, together with the phonolite of the Wolf Rock, are remains of a yet later period, the Miocene . . ."²

Such then were the orthodox opinions, in 1879, concerning the twin mysteries of the rocks of the Bolt district in Devon, and of the Lizard district in Cornwall.

¹ See *Trans. Devon. Assoc.* xi. 325.

² *Quar. Journ. Geol. Soc.* xxxiii. 924.

Personally I had not entered in my paper into the question of the relation of the trawled block to the mica-schists on shore, having contented myself with maintaining that the trawled block might be considered *prima facie* evidence that the large detached stones in the sea off Salcombe were really granite, and that the ground on which they lay was granite too. In this case silence implied consent with the orthodox doctrine, so far as the Bolt district was concerned.

Towards the close of my paper, reference was made to two trawled stones existing in the grounds of the Brixham Orphanage—one forming the doorstep, which I judged to be identical with the block sent to Torquay; and another, which I described as a grey granite, of extremely fine grain, and excessively hard. Through the kindness of the Rev. H. H. Mayo, specimens of each of these stones had been supplied to me.

There is no occasion to immortalise the mistakes of others; but it is necessary for my story to state, that my "grey granite" was shown to a friend conversant with the granites of Dartmoor, and pronounced to be schorlaceous; but being advised by him to take the opinion of an expert, I did so, and was accordingly informed that the stone contained hornblende, but no schorl, so far as could be seen with the naked eye.

This conflict of opinion was very important, as, if the stone was schorlaceous, it was probably connected with Dartmoor; but if hornblendic, it might well be entirely distinct therefrom. Speculation on the hornblende was soon started.

In May, 1879, the *Pelican* had taken another large block of stone, and a specimen of this one, together with a piece of the fine-grained rock aforesaid, was sent to Cambridge for analysis by my dear friend the late Mr. E. B. Tawney, who was at that time Demonstrator of Geology. In reply I received the following letter, bearing postmark July 18th, 1879:

"DEAR HUNT,—I have given the granites a short examination, and find that the coarse one is a hornblendic granite, with quartz. It contains both orthoclase and plagioclase, and small apatite prisms. The quartz is rather rich in hairlike enclosures.

"You will not care for details, but my impression of the rock is, that it is like no Dartmoor granite that I know of, and has no connection with them. I should *guess* that it is therefore not *in situ*. If it is, it must be connected with Brittany rocks probably.

"The second rock I should not consider a granite at all, if I may judge from so small a specimen. It seems to me a *gneiss*, and therefore not an operator, but a patient of metamorphism. Again I should guess it to be an erratic (or else a part of the Bolt Head series, if they are sufficiently metamorphosed to be gneiss). This rock contains two micas, biotite and muscovite, also apatite, the two feldspars, the plagioclase fairly abundant, quartz, and some peculiar fragments of graphic quartz.

"This rock would repay further study.

"These notes being incomplete, are not for publication,³ but you may cite my ideas if you like.

"Will you send me exact localities, that I may label my two slides?

"I should adopt the theory of icebergs from up Channel, since I know none of your facts making against it. . . .

"If I do manage to find you at Torquay in September, I shall make a run for the Bolt.

"Yours sincerely,

"E. B. TAWNEY."

This was sufficiently startling. The rock which I had written of as a fine-grained granite, and which had been variously described to me as containing schorl and hornblende, turned out to contain neither schorl nor hornblende, and not to be a granite at all! So much for macroscopic determinations.

On expostulating with Mr. Tawney, I received the following:

"There is an error somewhere. I've looked again, and there is *no hornblende* in the fine-grained rock. To call it a hornblende granite is the opposite of the truth. . . . If I could see a good-sized piece of the *fine-grained*, one could see whether it was a gneiss.

"I certainly shall not care to fight a theory founded on your 'hornblende,' but should stand off a barge-pole length at least, for fear the ruins should fall on me. . . .

"It is surprising to see you following Pengelly.⁴ Well, I'm glad you're on the side of the angels for once. Hoping you will have a pleasant meeting (it would be mockery to wish you good weather, for that you won't have),

"Yours sincerely,

"E. B. TAWNEY."

³ Mr. Tawney's analysis of this rock, No. 3, appeared in the first part of my Channel notes.

⁴ This must, I think, refer to my agreeing with Mr. Pengelly's view on the Devonian age of the Bolt district—the orthodox view. I had not perceived the significance of the gneiss mentioned in the former letter, which gneiss had clearly decided Mr. Tawney on visiting the Bolt at the earliest opportunity.

The discovery of gneiss and hornblendic granite having greatly upset my preconceived notion as to the character of the sea-bottom off the southern headlands of Devon, I determined to spare no expense in acquiring as many specimens of the trawled blocks as possible, and having them sliced for the microscope, Mr. Tawney lending me his valuable assistance as analyst. Mr. Tawney's letters in the correspondence that ensued throw so much light on the value of the microscopic analysis of rocks, and on the relation of the Channel blocks to the geology of the mainland, that I have no hesitation in making copious extracts from the letters in question.

After receipt of eight hand specimens, numbered from 2 to 9 inclusive, Mr. Tawney wrote me as follows:

- "No. 2. (Typical) granite.
- 3. Gneiss (?). I am doubtful whether this is a gneiss or a fine-grained granite. It looks like an intermediate.
- 4. Hornblendic granite.
- 5. Conglomeratic grit.
- 6. Serpentine.
- 7. Diabase (?). Shall know when I see the slice.
- 8. (Typical) gabbro.
- 9. Quartz syenite (?). Shall know by the slice."

"DEAR HUNT,—Until the slices arrive I am doubtful about three of the rocks; of the others you can run in the names at once.

"The descriptions will be about six lines to each, as an appendix to your paper. One will not theorize about the geology of the sea-bottom, as I expect you to do all that, and take all the responsibility about that department.

"I have to go to North Scotland, and then to North Wales; while I am detained here till about August 12th from July 1st. So that I should not be able to get to Devonshire till late in September, and that is just when you would naturally be away.

"Dr. Hicks . . . will be claiming the Start Point as pre-Cambrian, so I thought I would forestall him, and I will write and tell him about it. Of course it is all guesswork so far, but I've long wanted to see that district. I regret I did not work it when at Torquay. Such opportunities wasted, alas! So long as you are satisfied about the distribution of the blocks, I am. You are forewarned of hostile arguments, and are quite prepared to meet them I see, and that is all that is necessary. . . . Your paper seemed quite ready for printing. I am only surprised that you make so little of the granites as compared with the flints; but you can add the theorising afterwards, as you say . . .

"Yours sincerely,

"E. B. TAWNEY."

The paper above referred to is the one read at Totnes in 1880, in which I argued in support of the theory that the blocks represented a submarine area of granitoid metamorphic and altered rocks, by pointing to the Eddystone for the actual presence of gneiss, and to Mr. Holl's theory for the assumed presence of granite.

In the following letter Mr. Tawney refers to the before-mentioned rocks after having examined the slices.

"June 9th (1880).

"DEAR HUNT,—. . . You see I've said nothing about the place of origin of the rocks, as it does not belong to me; but I don't think the granites came from anywhere in Britain—above water [but they might be connected below water with the Channel Island rocks, of which I have *no* knowledge], but that concerns you, not me. And I do not believe them torn off rocks *in situ*, if you ask me. But certainly read the paper at the British Association. It is just the paper they like, because everyone can discuss it so nicely, and invent a theory of his own for it.

"I do not call the grit much altered, but Bonney would if it came from Llandinniolen, near Carnarvon, for it is just like that grit which Bonney calls pre-Cambrian, and Hughes calls Cambrian. It is not metamorphosed, like quartzite, or like gneiss; and I do not believe the felspars to be formed in it, but to be pebbles simply. But that is rather a nice question. The rock I am really doubtful about is No. 9, and what I have said I have said.

"As you cannot see the rock in place, it does not much matter whether it is igneous or not; but if you could, it would settle it.

". . . H. goes to Torquay with his class very soon. I have asked him to get me some Hey Tor granite, for I pine for rocks.

"Yours sincerely,

"E. B. TAWNEY."

July 1st (1880).

"Just home from Isle of W. and Swanage. The pink and the black-green are the *granites* referred to by me. I say nothing about the dioritic-like green rocks, which might be dykes anywhere. (Please don't make me call them *granitoid*.) So it may stand, 'Mr. T. informs me that he does not know any locality in Devon or Cornwall from which the *granites* from the Salcombe fishing grounds examined by him could have been derived.' Yes, it is because of absence of *schorl*, and other points . . . The gabbro and serpentine are just like the Cornish, but *all* serpentines are alike almost.

"Notes of microscopic examination of nine (varieties, specimens) of rocks from the Salcombe trawling ground. By E. B. Tawney, F.G.S., &c.

"If you prefer it, stick in letters, but I rather wish other people

omitted them also. Not that I mind it, but think it useless, unless it serves for identification. Rejoice to hear you can give me some Eddystone rocks, . . .

"Moving bubbles are very trying; one may look over dozens, and not see it move. One-eighth is necessary, I find. I hate looking for them, as one stares to giddiness, and one fancies movement sometimes when there is none.

"Yours sincerely,

"E. B. TAWNEY."

On July 7th I received the following letter, acknowledging receipt of five specimens of the Eddystone rock which Mr. R. N. Worth had been so good as to procure for me :

"Five rocks to hand, one not numbered. One and unnumbered are identical, so I propose to slice only 1, 2, and 3, for 3 and 4 are both veins probably just as you see in Malvern gneiss; and it is no use slicing even 3, but as you send them it may be done. These veins are a bore in rocks; they are supposed to be crystallised slowly from cold water and cement-up bits of broken rock.

"The foliated (1) is a nice gneiss. May we keep the big bit and return you the smaller unnumbered bit? Then about (2); shall we draw the sword and divide the child? It were a pity to spoil it. Let one have it all, and let *us* be the one.

"Mark my modesty—you might be content with the fragment cut off by the slicer. . . .

"It is very remarkable so good a gneiss, and I suppose there is nothing like it in Start.

"Probably it is more connected submarinely with Channel Island rocks; and so of your Salcombe, *if in situ*.

"Yours sincerely,

"E. B. TAWNEY."

The following letter, undated, was written in the summer of 1880, but whether it refers to my British Association paper or Devonshire Association paper for that year I cannot determine :

"DEAR HUNT,

"After a hasty look at your paper I write first impressions, but first my impression of the rocks themselves. Excuse my suggesting scientific doubts. I am always a sceptic, and don't believe even in my doubtings.

"But—and—the rocks are fearfully rounded, such as no sea could do it, except between tide-marks. So the notion of their being so rounded at twenty fathoms is impossible or improbable, therefore (1) doubt their being bottom rocks. Next, there are such a lot of different sorts, and most of them cannot metamorphose actively—*e.g.*, one a serpentine, another coarse gabbro, another a diabase (?)—these are always intrusive rocks, and must

be out of question as metamorphosers. The granites—hornblendic and otherwise—produce alteration, I admit; but does not this varied catalogue show you have transported blocks?

"Therefore (2) probably not bottom rocks. Moreover, your red sandstone makes against the rounding theory. Then your flints. Surely if the sea won't round flints of a few lbs., how about the big boulders? There seems something that wants explaining here. . . .

"Probably all the Bolt Head is a pre-Cambrian area if that conglomerate came from it. I must certainly come down to Devonshire to see about it. In great haste,

"E. B. TAWNEY."

The Episode of the "Shovel" Gneiss.—At the Totnes meeting of this Association, in 1880, Mr. R. N. Worth made the announcement that certain specimens of the Shovel Rock—a reef in Plymouth Sound—had passed into his possession, and that they were "as distinctly gneissic in character as the most gneissic of the Eddystone examples." Mr. Worth was good enough to send me a piece of the stone referred to, which in due course went on to Mr. Tawney, and was reported on by him in Part II. of my "Channel Notes." It seemed to me a most important discovery taken in connection with the submarine geology of the Channel, and I mentioned it both in the paper referred to and also in a short paper read at the York meeting of the British Association. The reputed history of the gneissic fragment under discussion is as follows:—

"Two of the officers of the Royal Engineers, engaged in superintending the construction of the iron-cased fort built upon the Shovel Reef, immediately within the Plymouth Breakwater, gave (the specimens) to Mr. Haldane, Librarian of the Public Library at Plymouth, as part of the rock that had been removed in clearing away a portion of the reef for the foundation of the fort."⁵

On investigating the history of this fort I learnt that the Royal Engineers had nothing to do with preparing the foundations, and that the submarine portions were built by contractors for the Admiralty, on a rock consisting of clay slate and limestone.⁶ My firm conviction is, that however the specimens went astray in the first place, they originally came from the Eddystone. The "Shovel" gneiss and the foliated specimen from the Eddystone are indistinguishable.

⁵ *Trans. Devon. Assoc.* xiv. 646.

⁶ *Ibid.* xv. 355.

In the spring of 1881 I received the following :

"It is very extraordinary getting gneiss in Plymouth Sound. I cannot make it out. How did it get there without showing on the mainland? So odd that it should not be seen in the Prawle district, but there was nothing approaching gneiss there. . . . I fear it will not be possible for me to reach Devonshire this spring; but some summer or other I hope to go again to Start Point and Cornwall, only there are not sufficient vacations for the purpose. One ought to go to Donegal, Sutherlandshire, Saxon Switzerland, Cornwall, and N. Wales this summer, only how is it to be done? . . .

"Yours sincerely,

"E. B. TAWNEY."

This is the only direct reference in Mr. Tawney's correspondence to his visit to the Prawle district. It may be gathered, however, from what has gone before and from what follows, that he went to the locality referred to with the avowed object of proclaiming the district pre-Cambrian, but was unable to confirm his preconceived conclusions. The next letter was the following, received on June 4th, 1881:

"Enclosed is a short description of the Shovel Rock. It is no use repeating details of well-known types, so I've done it short. It is very like No. 1 Eddystone. . . . I've not moralised; I leave you to do that. It is plain that the granite has nothing to do with the Moor granite, and must belong to the Channel Islands or Brittany series. So of the gneiss, &c.; but I've no specimens to compare them with from there, and only rely on my Guernsey memories. . . .

"Yours sincerely,

"E. B. TAWNEY."

The following refers to a paper I was about to read at the British Association meeting at York:

"It is no matter how wild your views are at the British Association, because they are not printed in full. You may get criticisms and useful hints there. . . . You go so fast in your geological views that I cannot keep up; but do not fear to put them forth.

"My views are rather Britannic; I look to Brittany for their origin. I consider Brittany reached to Plymouth Sound and then stopped short, but am inclined to give Start Point to it. If so, the granites are *not all* pre-Devonian, though pre-Carboniferous. Hence I differ from you, or lag behind.

"Yours sincerely,

"E. B. TAWNEY."

Mr. Tawney's views are not evident at first sight. It would appear that while I was striving to establish the fact

that certain of the granites were pre-Devonian, to harmonise with my pre-Cambrian conglomeratic grit, Mr. Tawney was stipulating for some of the granites to be post-Devonian, to harmonise with the then generally accepted view that the Prawle district was altered Devonian.

The views Mr. Tawney was combatting were those set forth in the following recapitulation of my paper read at York, dated June 17th, 1881:

"The case in favour of the antiquity of the typical granites and gneisses of the Channel may be briefly summed up as follows:

"(1) They are totally different from the Devon and Cornish granites, and are therefore probably of different age.

"(2) They are known to exist at three points, in a line extending from Plymouth Sound to a distance of upwards of thirty miles in a south-westerly direction. But their proximity to the Devonian rocks of Plymouth has never been suspected, and it is reasonable to suppose that if the Plymouth rocks have not been altered, it is because they were not in existence when the gneiss was metamorphosed. The typical granites are therefore not only not of the same age as the Devon granites, but they are older—they are pre-Devonian—whereas the Devon granites are known to be post-Devonian.

"(3) Some of the Channel rocks have been considered Cambrian or even pre-Cambrian, so it is not impossible these granites and gneisses may be of like antiquity. But whether this be so or not, and it is no part of my subject to prove that they are (pre-Cambrian), the presence in the Channel of older rocks than the Devonian would tend to strengthen the evidence I have adduced to prove that the granites and gneisses are at any rate pre-Devonian. If it proves to be the case, that these granites and gneisses are pre-Devonian, we must search elsewhere for the causes of the metamorphosis of the Devonian slates of the Start and Bolt district. Not that we may have to search long or in vain, for besides these typical granites and gneisses we have in the Channel quite another series, consisting of hornblendic granite and syenitic rocks, both eruptive and metamorphic; and again, besides these, many intrusive rocks, as the gabbros and diabases. But of these, both as to age and position, nothing at present is known, and it is useless to speculate."

In the course of the summer vacation the following letter had come to hand:

"... Brittany geology I am ignorant of, and that is why I cannot dare to theorise about the Channel floor. It would take some time and trouble to read it up and hunt up the literature, all which I have no time for; but you could do it easily. You are

in a position, having leisure, to work it up. Next time you are in town, pray examine and compare all Channel Island rocks and Brittany rocks in the Geological Society Museum, and get the Librarian to help you in finding papers in the *Bull. Soc. Geol. Fr.*; i.e., if you wish to work it up in the way that occurs to me as probably a fruitful one. Meanwhile at British Association say what you like, for it is not printed, and you can retract *in toto* if it seems good to you. . . . At York we can talk over subsequent movements.

"E. B. TAWNEY."

The next extract, from a letter received in July, 1882, evidences the transparent candour and scientific spirit of the writer. If there was one thing more than another, throughout the correspondence, insisted upon by Mr. Tawney, it was that the Channel floor off South Devon was geologically connected with the Channel Islands. Yet he hastens to furnish me with evidence to the contrary at the earliest opportunity; e.g.,

"I have been looking over two sets of Channel Islands rocks, and I do not find any of your rocks, nor are the characteristic Guernsey ones among those dredged. This is noteworthy. But I shall go to the Islands some day, and collect for our museum.

"E. B. TAWNEY."

The next letter was received on December 2nd, 1882. After referring to the price of a Cremona violin, for which he refused to accept the full price offered to him, thinking it was above the market value, Mr. Tawney, in his usual kind manner, went on to give me a few hints as to the use of the microscope:

"About Hornblende, in the clinodiagonal section, its angle may be 20° at maximum; in an orthodiagonal section it must be 0° . Any section intermediate in position will have an intermediate value for the extinction angle. Moreover, probably your instrument⁷ won't measure to within three degrees. What is your instrumental limit of error? Now, about Actinolite, it is simply a pale green, washed-out Hornblende; generally it looks like this, in which the peculiar angle, $124^\circ 30'$, is evident. You must (not) risk all in one *individual* in a slice; test several, and if they *all* give no angle it is not Hornblende; but the cleavage is distinctive. You must work up your mineralogy for rock-forming minerals. *New edition of Green's Geology* (1882) has a few words of good hints to microscopists

"I never could understand why Chesil Beach has such a steep slope. Sailors talk of the stones being thrown up, and one

⁷ A home-made rotating stage. .

certainly does find little pebbles thrown very high up on the rocks sometimes. They say in storms the water filters through the Chesil Beach without knocking it down or breaching it. These questions would come into Engineering literature more than into Geological, and I cannot tell you whether it has been discussed. Mr. Froude would have been a help to you. Worry all the sailors and engineers you come across to see if any information is forthcoming.

"Hoping you are enduring the weather well,

"Yours sincerely,

"E. B. TAWNEY."

Before the month closed the writer was no more, leaving a vacant place in the circle of English geologists which it is difficult indeed to fill. There may be specialists more learned, and students gifted with greater powers of both mind and body; but a more patient searcher after truth, absolutely unbiassed by any preconceived views of his own, it would, I think, be impossible to find. In the foregoing letters we have seen two instances of the even balance of his mind: First, in the case of the Prawle district, which he visited with the full conviction that he should be the first to proclaim its pre-Cambrian age (he never directly referred to the subject again); secondly, when having over and over again declared his belief that my Channel rocks were connected with the Channel Islands, he took the earliest opportunity of informing me that the evidences of the Channel Islands rocks was rather the other way.

Mr. Tawney, after apparently relinquishing his idea of the pre-Cambrian age of the Prawle district, and believing that it was connected geologically with Brittany—of whose geology he declared his ignorance—seems to have seen no reason for doubting that the rocks in question were of Devonian age, as was generally believed at the time.

With Mr. Tawney's death my interest in the problem presented by the trawled blocks was practically gone; but as specimens continued to come in—and it seemed a pity to lose valuable evidence—I had to seek for the assistance of some other specialist in the microscopic analysis of rocks, and Professor Bonney kindly undertook the task.

Since that time the question of the age of the schists of the southern headlands of Devon has come largely to the front; and as the discussion is now a matter of history, I will briefly review the facts of the case here.

In the *Tourists' Guide to South Devon* (published in 1879), p. 9, Mr. R. N. Worth points out that "on the South coast,

between the Start Point and Bolt Tail, there is a patch of metamorphosed rocks, which there is reason to regard as *Lower Silurian*."

In his paper to this Association in the same year Mr. Pengelly speaks of the slates being "certainly, and the schists probably, amongst the most recent Devonian deposits in South Devon."⁸

In 1877 Professor T. G. Bonney had described the earliest sedimentary rocks of the sister district of the Lizard peninsula as "probably about Lower Devonian age."⁹ I am obliged to drag the Lizard into the discussion for reasons which will appear presently.

Thus when I, in 1878, plunged unsuspectingly into this thicket of thorns (allied, it would seem, to the African variety, the "Wait-a-bit-Thorn"), the received opinion as to the Lizard and Bolt districts assigned the altered sedimentary rocks to the limited range between Lower Silurian and Upper Devonian; the intrusive rocks of the former district being considered very much more recent.

It will be remembered that my only reason for entering on the question at all was that I had been led to believe that the Bolt rocks had been altered by granite, and that granite might be found in the adjacent sea. In course of time I heard that the Brixham fishermen really did trawl blocks of granite there, and a little later on the *Pelican*, trawler, did actually trawl a large block of a granitoid stone, weighing $9\frac{1}{2}$ cwt., which was conveyed straight from the vessel to the Torquay Natural History Society's Museum without having touched dry land until it was deposited within the precincts of that temple of science.

Of course I sang Q.E.F. and Q.E.D. The problem of how to get a Salcombe granite block had been solved (?), and the theorem of the metamorphosis of the Bolt district had been demonstrated (?).

It is easy to be wise after the event, and to inveigh against the rashness of writing a paper on a "block of granite" before the rock had been sliced and examined. But it must be remembered that both Mr. Pengelly and myself were well acquainted with the macroscopic appearances of Dartmoor granites, and aware that their common constituents were black mica, quartz, felspar, and tourmaline. The trawled block No. 1 was, to all appearance, a granitic rock containing well-defined, long, narrow, black crystals, very tourmalinesque

⁸ *Trans. Devon. Assoc.* xi. 325.

⁹ *Quar. Journ. Geol. Soc.* xxxiii. 924.

in appearance. That the block was not porphyritic was unimportant, as the Dartmoor granite varies greatly in that respect.

The history of the first five specimens obtained from the Channel is really very singular. No. 1 was purchased by the committee of the Torquay Natural History Society, and was therefore out of my control for slicing purposes; and as it was important to be able to describe it as absolutely untouched by hammer or chisel, it was desirable to keep it intact. No. 2 was the rock that formed the doorstep of the Brixham Orphanage, a true granite. Had this stone been the one landed at Torquay it would have precisely confirmed the granitic theory of the Channel bottom off the Bolt. However, with No. 2 I received also No. 3, both of them rocks preserved at the Brixham Orphanage. No. 3 was a disturber. It raised the question of hornblende and schorl, and, though proved to contain neither the one nor the other, by thus attracting attention, it revealed the fact that it was as much gneissic as granitic, and therefore differed in character from, though similar in composition to, the Dartmoor granite. No. 4 was the next rock I received direct from the Channel—another disturber—a hornblendic granite, differing greatly in composition from the Moor granite. The fifth rock capped the quintet—a conglomeratic grit of very ancient type, which Mr. Tawney clearly believed to be of pre-Cambrian age, and which he was confident experts would not place later than the lower horizon of the Cambrian.

These rocks (excepting No. 1) and some others were exhibited to the Geological section of the British Association at Swansea, in 1880, where they were seen by Dr. Hicks, who recognised among them pre-Cambrian types.

Subsequently these specimens were referred to by Dr. Hicks as follows, in a paper "On some Recent Researches among Pre-Cambrian Rocks in the British Isles," read to the Geological Association:¹

"For some years past I have believed that pre-Cambrian rocks would be found in Cornwall, and it appears now that this is likely to be proved ere long to be a fact. The researches of Mr. Collins in the Meneage Peninsula, and of Mr. A. R. Hunt along the coast of South Devon and Cornwall, have brought to light some new facts, which are, in my opinion, almost conclusive of the presence in those areas of rock of pre-Cambrian age. . . . I must, however, state that neither of these authors have as yet committed themselves to the view that these are pre-Cambrian rocks. Still, Mr.

¹ *Proc. Geol. Assoc.* vol. vii. No. 1.

Collins has stated that there are some of 'pre-Silurian age,' and Mr. Hunt has granted the possibility of the rocks he has examined being pre-Cambrian. I have seen some of the specimens collected by the latter, and believe that among them there are types only known in the pre-Cambrian rocks in this country. At present, however, it would be unsafe to theorise upon the evidence available; but no harm can arise from briefly referring to the facts. It is well known that the Eddystone Lighthouse is built upon rocks of a gneissose type—some massive, others more schistose. These gneisses appear to be of the true type of the older or granitoid kind, hence rendering it probable that, in the Channel at least, a ridge of these older rocks occurs. Mr. Hunt, when reading his recent paper at the British Association, exhibited numerous masses, which he had dredged up off the coast of South Devon and Cornwall, and amongst them a very large number were found to be gneiss rocks.

"Some pieces of a conglomerate were also found, and in these distinct fragments of older rocks occurred. These, as suggested by Mr. Tawney, to whom they were first submitted, appeared so exceedingly like a conglomerate, near Caernarvon, in North Wales, that it would be impossible almost to distinguish bits of the one from the other."

This recognition by Dr. Hicks of the pre-Cambrian character of some of the Channel rocks was of very great interest to me, as it was the first opinion unreservedly given on them by an expert. There are one or two slight inaccuracies in the above account that it would not be worth while mentioning, except for the fact that silence on my part, when referring to Dr. Hicks's paper, would be taken to imply consent. I never dredged any of the rocks myself, nor do I think that "amongst them a very large number were found to be gneiss rocks." Only one piece of conglomerate was found containing distinct fragments of older rocks; and it was the conglomerate, not the contained fragments, which Mr. Tawney pronounced "just like that grit which Bonney calls pre-Cambrian, and Hughes calls Cambrian."

Dr. Hicks speaks of the Eddystone rocks being "of a gneissose type—some massive, others more schistose." This is interesting as showing the then accepted belief on this point.

In the July preceding the Swansea meeting, I sent my Eddystone specimens to Mr. Tawney, and although the analyses were not published until late in the following year, I find on the MS. of my British Association paper the following note, made during the discussion on it: "Tawney pronounces the two varieties of Eddystone to be the same rock, and both to contain garnets." This was in reply to a

member who was referring to the two varieties found in the reef, and was, I expect, the first public announcement that they were the same rock.

Mr. Tawney's analysis of the Eddystone gneiss did, I think, good service in settling once for all the disputed question as to whether the reef was composed of mica-schist, gneiss, granitoid gneiss, or granite.

The question of the reputed character of the Eddystone rock was discussed in detail in a paper read by me at Exmouth in 1883.²

The rocks submitted to the British Association at Swansea, and commented upon by Dr. Hicks, were Numbers 2, 3, 4, 5, 6, 7, 8, and 9. Their analyses were published in the following year, 1880, and showed that they consisted of two granites, a gneiss, a syenite (?), a serpentine, a gabbro, a conglomeratic grit, and a doubtful granitoid rock (No. 9). In 1881 I published Mr. Tawney's analyses of four additional specimens, Numbers 15, 16, 17, and 19, being respectively a gabbro, a diorite (?), a diabase, and a granite. In 1883 appeared Mr. Tawney's analyses of Numbers 20, 21, 22, 24, and 25, comprising three hornblendic granites, one typical granite, and a quartz diorite.

The most important of the above rocks are Nos. 3, 5, and 19. Nos. 3 and 5 are, as has been shown, the gneiss and the conglomeratic grit, both so far away from the type of any rocks known in Devonshire. No. 19 is of equal interest for another reason. With the exception of No. 19 all the specimens of the Channel rocks have been trawled intact, and then either the blocks themselves have been retained on board the fishing vessel, or fragments have been detached and kept for me. In the case of No. 19, only a single fragment was brought up in the trawl, and this under very peculiar circumstances. The *Pelican* had got "fast" in what was supposed to be a wreck, and had thus remained fast for some hours. When the trawl came away, a fragment of granite showing a clean fracture was found in it. It seems clear enough that the trawl had caught in a shelf of granite, and that after hours of heaving and hauling the strong gear had succeeded in tearing away the obstruction. The only possible alternative is that the crew of the trawler told an untruth, and had merely broken off a fragment from a block in the ordinary way. So far as I was concerned I required no confirmation of their statement, but for the sake of others I obtained a written certificate setting forth the circumstances

² *Trans. Devon. Assoc.* xv. 202.

under which the fragment was taken, a copy of which certificate will be found in a previous volume of our *Transactions*. But in truth, no certificate is needed. This fragment, No. 19, differs from all the others in that it evidently formed a part of a thin slab of rock, and not of a massive block. Planes of fracture, such as would give rise to similar slabby pieces, occur in another of the Channel rocks; viz., No. 41.

The occurrence of granite *in situ* in the Channel seemed to me a fact of such importance that I made it the subject of the paper to the British Association at the York meeting in 1881, already referred to.

No. 19 was the first of the Channel rocks, of which the quartz was rich in fluid cavities and moving bubbles. Having photographed several of the Channel slides with low powers and polarised light, it occurred to me to try some of the bubbles with a $\frac{1}{16}$ inch immersion objective. Whilst adjusting the light with this object in view by the aid of an achromatic condenser, furnished with diaphragms, I was amazed to see one of the bubbles dart backwards and forward at each movement of the diaphragm, according as the light was cast on one side or the other. Taking the cause of the motion to be the light, I next wound a coil of insulated wire round the slide, and sent a current of electricity through it, to ascertain if the bubbles were sensitive to magnetism. Of course, the bubbles responded readily to the electric current, and could be moved hither and thither at will by reversing the direction of the current through the wire. I had, however, found a veritable mare's nest, as it was neither light nor magnetism which affected the bubbles, but only the heat which accompanied both. However, the mistake was not entirely a cause for regret, as it aroused my interest in "fluid cavities," and was the means of my obtaining upwards of a dozen valuable reprints of papers by Dr. Sorby and Mr. W. N. Hartley, kindly presented to me by the authors.

At the time of the death of Mr. Tawney the state of the Channel investigation, as between ourselves, was somewhat as follows: I had been very much impressed with the value of the evidence of the conglomeratic grit, which seemed so likely to be Archæan, as also by the discovery of granite *in situ* twenty miles south-west of the Eddystone. I had argued that the Eddystone was certainly *in situ*; the granite almost certainly *in situ*; and the conglomeratic grit probably not far distant; and that all three were pre-Devonian, and therefore had no part in the metamorphosis of the mica-

schist of the Bolt. But so indoctrinated had I been with the belief that the Bolt rocks must be necessarily Devonian, that I took the precaution to point out that if the typical granites and gneisses were pre-Devonian, there were still plenty of hornblendic granites left unaccounted for, which might be post-Devonian.³

At that time Mr. Tawney and myself were both under what I must call the baleful influence of the "Shovel gneiss;" yet, notwithstanding the belief that gneiss actually occurred in Plymouth Sound, Mr. Tawney's last recorded opinion as to the age of the granites, so far as I am aware, was that they were "not all pre-Devonian, though pre-Carboniferous." Indeed, Mr. Tawney seemed as anxious to insist on some of the granites being post-Devonian, as I was anxious to prove others pre-Devonian.

No doubt, had Mr. Tawney been able to satisfy his mind that the Bolt schists were of Archæan age, he would not have been so reluctant to entertain the idea that the Channel granites were Archæan. It will have been noticed that Mr. Tawney in his letter had more than once expressed doubt as to the detached Channel rocks being *in situ*. Moreover, he had never committed himself to any expression of opinion as to the age of the Eddystone reef. Under these circumstances, if he felt it necessary to start with the assumption that the schists of the mainland were Devonian, my argument in favour of the antiquity of the Channel rocks, though probably disquieting, clearly fell short of demonstration.

In November, 1882, Professor Bonney read a paper to the Geological Society on "The Hornblendic and other Schists of the Lizard District, &c." Referring to the "age of the metamorphic series," the author said: "Hence, as I consider that we are not yet in a position to offer a definite classification of the members of the Archæan series, I will say no more than that I consider these Lizard rocks to belong to some part, and that by no means the latest, of the record of that immense period of time."⁴

Further on the Professor described the serpentine as being "cut by granite veins, which are probably of the same age as the great masses further north, that is, later than a good part of the Carboniferous, and earlier than the Trias."⁵

In the spring of 1883 Professor Bonney visited the Bolt and Prawle district, and in November of the same year sub-

³ *Trans. Devon. Assoc.* 1881.

⁴ *Quar. Journ. Geol. Soc.* xxxix. 21.

⁵ *Loc. cit.* p. 23.

mitted to the Geological Society his paper "On the Geology of the South Devon Coast from Torcross to Hope Cove." In a few words he concisely sums up the then existing opinion as to the rocks of the district: "The schists of the southern part of this district are regarded simply as altered Palæozoic rocks, possibly of Devonian age, whose upheaval is connected with the series of post-Carboniferous disturbances which have affected the south-west of England, and whose metamorphism is probably due to some proximate protrusions of igneous rock, analogous to those yet visible in the granite bosses of Dartmoor and of sundry districts of Cornwall."⁶

In the course of the paper the following passage occurs; viz.: "I think, therefore, that we may safely regard the South Devon schists as Archæan, and as a prolongation of the *massif* so distinctly indicated in the Lizard, to which also belonged the gneiss of the Eddystone and those granitoid rocks which furnished the pebbles in the conglomerate at the Nare Point."⁷

The two passages quoted above conveniently set forth the old view and the new as to the age of the schists of South Devon. So far as I am aware we find here, for the first time, the Archæan age of the Eddystone gneiss asserted by an expert in petrology.

In the course of the discussion which followed this paper, my friend the Rev. G. F. Whidborne "asked if the rocks dredged in mid-Channel by Mr. Hunt at all resembled those of the coast?"

Professor Bonney in reply "stated that the rocks dredged by Mr. Hunt in the Channel were generally of a much older type than those of South Devon."⁸

This is the first instance of my Channel rocks being confidently claimed as Archæan, and it is an important opinion as being announced to the Geological Society of London.

It evidences a very different state of scientific opinion from that prevailing about two and a half years before, when Mr. Tawney, after his visit to South Devon, seemed reluctant even to allow my contention that *some* of the Channel granites might be pre-Devonian. I did not ask for all. Now the tide had turned with a vengeance, and my rocks were announced as generally of a much older type than those of South Devon; that is to say, my pre-Devonian granites were not only Archæan, but old Archæan. At the time this announcement was made, eighteen of Mr.

⁶ *Quar. Journ. Geol. Soc.* xl. 2.

⁷ *Ibid.* xl. 23.

⁸ *Loc. cit.* p. 27.

Tawney's analyses of the Channel rocks had appeared in our *Transactions*, and three of Professor Bonney's. Of the latter three, one (No. 26) was specially described as "not likely to be Archæan," the second (No. 27) was left uncertain, and the third (No. 28) was the one described as having "the aspect of a very ancient Archæan gneiss." The above announcement was of course not intended to be taken literally, for besides the eruptive rocks—gabbros, diorites, and diabases—which Mr. Tawney had distinctly said might be of any age, we have one of them—a gabbro—actually attached to the "killas" it broke through; and coming to still later times, we have blocks of both Neocomian sandstone and Triassic sandstone.

I am very desirous that geologists should not decide too hastily on the facts which I have somewhat laboriously collected for them, and have therefore ventured to enter a caveat both against Dr. Hicks's assertion, that of the specimens exhibited at Swansea "a very large number were found to be gneiss rocks," and against Professor Bonney's statement, that my rocks are generally, or perhaps it would be more accurate to say were, in 1883, "generally of a much older type than those of South Devon." However, I am far from wishing to hold either of these distinguished geologists responsible for statements made either in the heat of discussion or founded on information obtained in discussion.

In August, 1884, there appeared a paper in the *Quar. Journ. Geol. Soc.*, by the Rev. E. Hill, "On the Rocks of Guernsey," with an appendix, by Professor Bonney, on their microscopic structure. Mr. Hill remarks on the gneiss as follows: "Although I have no doubt as to the Archæan character of the Guernsey gneiss, yet absolute proof is wanting at present, and may perhaps never be obtained." (p. 419.) Referring to the same rock, Professor Bonney wrote, "It cannot, I think, be doubted that we have exposed here in the Channel Islands a fragment of the foundation stones of the earth, of rocks roughly corresponding in age with those that on the continent of America have been named Laurentian." (p. 420.)

In February, 1887, Mr. Hill published a paper in the *Geological Magazine*, "In Brittany with the Geological Society of France." Two passages may be quoted: "We examined in shallow quarries the granite of Pontaven, supposed to be of pre-Cambrian age." (p. 62.) "The porphyroid granite of Huelgoat resembles that of Rostrenen, and belongs to the same (Carboniferous) age." (p. 64.)

Thus we actually find recognized in Brittany both pre-Cambrian and Carboniferous granites.

In March, 1887, Professor Bonney followed with a paper on "The Older Rocks of Brittany," in which he writes, "There is to be found in Brittany, as maintained by Dr. Barrois and other French geologists, a great fundamental mass of true Archæan rock, that is, of rock which, whatever be its genetic history, had become what we should call gneiss and schist before the earliest Cambrian rocks were deposited."⁹

On the same day Mr. Hill followed with a paper on "The Rocks of Sark, Herm, and Jethou." In the subsequent discussion, the President of the Geological Society, Professor Judd, stated that "the conclusions as to the Archæan age of the lower gneissose rocks would probably be generally accepted."

The last paper on Brittany I need refer to is one by Professor Bonney, read November 9th, 1887, "On some Results of Pressure, and of the Intrusion of Granite in Stratified Palæozoic Rocks near Morlaix, in Brittany."¹

In July, 1887, Mr. A. Somervail read his paper "On the Metamorphic and Associated Rocks of the Extreme South of Devonshire, Part I." to this Association, in which he expressed his conviction of the unity and age of the strata, and of their progressive metamorphism in the truest sense of the term.

In November, 1887, appeared Miss C. A. Raisin's paper, "Notes on the Metamorphic Rocks of South Devon." The chief point to be noticed, so far as it affects this enquiry, is that the authoress confirms Professor Bonney's view, "that there is no evidence of progressive metamorphism in this district."²

In March, 1888, Mr. Howard Fox read a paper "On the Gneissic Rocks off the Lizard," in which he described the characters of the different outlying rocks of that headland. Professor Bonney stated that they "somewhat resemble the gneiss of the Eddystone rock."³

In July, 1888, Mr. Somervail read his second paper on the Metamorphic Rocks of South Devon, in which, after taking note of criticisms by Professor Bonney and Miss Raisin in the *Geological Magazine*, he confirmed the conclusions arrived at in his previous paper.

In the foregoing pages I have endeavoured to place before the Association the gradual change that has taken place in scientific opinion as to the age of the metamorphic rocks of South Devon since I read my paper at Ilfracombe, "On a Block of Granite from the Salcombe Fishing Grounds." At

⁹ *Quar. Journ. Geol. Soc.* xliii. 319.

¹ *Ibid.* xliv. 11.

² *Ibid.* xliii. 732.

³ *Ibid.* xliv. 317.

that time, as we have seen, Professor Bonney had lately stood sponsor for the Devonian age of the metamorphic rocks of the Lizard, and Mr. Pengelly had accepted my trawled block as confirming the generally received view of the Devonian age of the metamorphic rocks of South Devon. Now what a change has come over the scene! The flood of scientific dogma has turned imperiously towards the Archaic past, and our member, Mr. Somervail alone has ventured to hold aloft the old flag in defence of the doctrine of progressive metamorphism which once was so orthodox. A clergyman once declared from the pulpit, in my hearing, that the majority are *always* wrong. If this be true, there can be little doubt that the metamorphic rocks of South Devon are not Archæan, whatever they may be.

In these notes it has been my object to confine myself as much as possible to the record of facts, and to avoid debateable ground, so I will pursue this subject no further.

Since my last paper was read, at the Seaton meeting in 1885, only three additional stones have come to hand; viz., Nos. 41, 42, and 43.

(41) On May 11th, 1887, Mr. W. M. Baynes brought me two fragments of a stone taken by the *Pelican*, with the Eddystone light bearing north by east, 16 miles. Weight estimated from 5 to 6 cwt.

(42) On March 1st, 1888, Mr. Baynes sent me two fragments of a stone, with an unsigned note (apparently from the skipper of the *Pelican*) to the following effect: "Sir,—The stone that the *Pelican* caught was about 3 cwt., and was caught, with the Start bearing north-east about 12 miles, on the 10th February, 1888."

(43) On 6th March, 1888, I went to Brixham in the *Black Duck*, by invitation of Mr. W. M. Baynes, to see a large stone on the pier, which had been landed by a trawler. On arrival I found a large block, weighing, I should say, over 12 cwt., judging by the Torquay stone (No. 1), which weighed over 9 cwt. It had the rounded appearance characteristic of the Channel stones, due to surface wearing, and their usual angular appearance, due to jointing. A fisherman knocked off a few small pieces for me; but the block was so hard that no large fragment could be detached. A bacchanalian-looking bystander enquired of me, "Do you know how the stones got there?" I said, "No; but I should like to." "Then I can tell you," quoth he. "You know Oliver Cromwell?" I replied I had never known him personally, but had heard of him. "Well," answered

my informant, "he fired off the stones at the sea-gulls; that's a fact." This foolish dialogue is worth recording, as about this, the last stone forthcoming from the Channel, the same old legend of Oliver Cromwell has cropped up, which Mr. Mayo communicated to me with reference to No. 3.⁴

No details were forthcoming about No. 43, excepting that it had been landed by the *Mazeppa* trawler.

Early in the present year I had Nos. 41, 42, and 43 sliced for the microscope, and also had a section prepared of No. 1, from a chip which had been preserved when a brass description-plate had been affixed to the block in the Museum of the Torquay Natural History Society. It has thus happened that the microscopic analysis of No. 1 is only published in this the concluding number of "Channel Notes." It was with feelings of unusual interest that I put the slide of No. 1 into my microscope, the instrument that had done such good work in the hands of Mr. Tawney, and which was most kindly presented to me by his executors.

The first glance showed that the rock was no granite, but, to the best of my very limited knowledge, a diorite with a little quartz, and certainly not schorlaceous. This diagnosis may serve to show how useful the petrological microscope may be even in the hands of a beginner armed with the most elementary knowledge of petrology.

From macroscopic observation I had confidently described this stone as "a block of granite from the Salcombe fishing grounds;" in which case it would have contained mica, orthoclase, and plenty of quartz, and the quartz would probably have abounded in fluid enclosures, showing the plutonic origin of the rock; but instead of this the microscope revealed hornblende and plagioclase instead of mica and orthoclase, with quartz in a minority and particularly poor in bubbles, and bore witness moreover that the rock was rather eruptive than plutonic—a rock in which the quartz was fused rather than dissolved. Professor Bonney's analysis pronounces the rock to be a quartz-diorite, and such being the case, we scan with renewed surprise the first eight rocks on our Channel list; viz., quartz-diorite, granite, gneiss, hornblendic granite, conglomeratic grit, serpentine, syenite, and gabbro; showing, as they do, such an extraordinary variety, without anything approaching a duplicate among them. Until No. 1 had been examined there seemed every possibility of its duplicating either No. 2 or 4, but it proves to be not even distantly related to them.

⁴ *Trans. Devon. Assoc.* xi. 316, 317.

On reviewing the list of the rocks we find they group as follows:

- 8 Granites. Nos. 2, 19, 20, 27, 34, 35, 39, 42.
- 4 Hornblendic Granites. Nos. 4, 21, 24, 25.
- 1 Gneiss. No. 36.
- 2 Granitoid Gneiss. Nos. 3, 28.
- 1 Hornblendic Gneiss. No. 33.
- 3 Hornblendic Granitoid Gneiss. Nos. 31, 32, 41.
- 1 Microgranulite. No. 40.
- 1 Quartz Felsite. No. 43.
- 2 Syenite. Nos. 7, 9.
- 3 Diorite. Nos. 1, 16, 22.
- 2 Diabase. Nos. 17, 37.
- 3 Gabbro. Nos. 8, 15, 38.
- 1 Serpentine. No. 6.
- 1 Trachyte. No. 29.

33 Crystalline rocks. (If we include the serpentine.)

Of non-crystalline rocks we have:

- 2 Conglomeratic-grit. Nos. 5, 26.
- 1 Killas. (Attached to 15.)
- 1 Triassic Sandstone. No. 10.
- 1 Neocomian Sandstone. No. 23.
- 4 (Sets) Chalk Flints. Nos. 11, 12, 14, 18.
- 1 Limestone. No. 13.
- 1 Grit. No. 30.

11 Sedimentary rocks.

The above thirty-three crystalline rocks and eleven non-crystalline make up together the forty-three⁵ specimens catalogued in my lists. Nos. 13 and 30, the last two mentioned, are inserted to make the numbers complete; but they were catalogued in error, being too small to have any value in the present enquiry.

With respect to the origin of the above blocks of stone, the following suggestions have been made:

1. That they were connected in some way with "Old Noll"—Oliver Cromwell—or possibly somebody else.
2. That they were used as boats' anchors.
3. That they were brought by ice down Channel.
4. That they were brought by ice up Channel.
5. My own contention being that they are to all intents and purposes *in situ*.

⁵ No. 15 being a junction of Gabbro and Killas counts as two.

The problem of origin is certainly a perplexing one. Those who maintain a distant derivation have to show where the blocks came from, and how they came.

Those who contend for a local submarine origin have to explain how such solid blocks could have become detached from the parent beds.

A glance at Delesse's beautiful lithological map of the French seas will suffice to show that were the floor of the Channel laid bare a geologist could walk from the Lizard to Brittany through an area of rocks detached, and *in situ*, though chiefly the former. That area is actually mapped as one of detached rocks (*roches désagrégées*); whilst the area off the Bolt, with which this paper deals, is mapped as a sandy one. If owing to different conditions of deposition and denudation in the Channel the area of detached rocks off the Lizard is gradually covered by sand on going to the eastward, it is likely enough that stronger tides and currents off the southern headlands of Devonshire would have the local effect of laying bare a block here and there, to the great inconvenience of the trawlers frequenting the generally sandy area. That trawls could detach the blocks from their beds is as possible as that "Old Noll" fired them at the sea-gulls; but that trawlers could have dragged them about all over the Salcombe fishing grounds when detached is practically certain. Thus none of the detached blocks have any claim whatever to be considered *in situ* when caught, though they may fairly claim, I think, to represent rocks forming the bed of the Channel not far distant.

However, it is clearly impossible to prove that some of them may not have been ice-borne. Let those who maintain that theory show cause for their belief.

Appended to this paper is a detailed description of Nos. 1, 41, 42, and 43. And I cannot better conclude this series of papers than with the expression of my sincerest thanks for the unfailing courtesy and promptness with which Professor Bonney has in every instance furnished me with analyses of the different Channel rocks as soon as they have been sent to him for examination.

P.S.—I have discussed in a separate paper the question of the age of the Granites of Dartmoor and the Channel. (*Trans. Devon. Assoc.* xxi. 238.)

NOTES BY THE REV. PROF. T. G. BONNEY, F.R.S.

1. The fragment exhibits a pale yellowish-white felspar and a very dark green hornblende, which appear to be rather closely set in a dull yellow-grey rather compact matrix. The slide shows felspar crystals, which have a tolerably regular outline, but are, as a rule, much decomposed, the mineral being often converted into an aggregate of earthy granules. In many cases it is impossible to identify the species of the original mineral, but in some the polysynthetic twinning of a plagioclase is still visible. Now and then a very thin border of clear felspar can be seen. This, together with the condition of the matrix, suggests the possibility of the injury to the felspar crystals being anterior to the final consolidation of the rock, during which they received a slight augmentation, similar to that described by Professor Judd.⁶ The hornblende is a rich green colour, with fairly strong dichroism, and tolerably perfect crystal outlines; cross sections showing the faces parallel with ∞P and $\infty P \infty$. Enclosures are rather frequent, being occasionally magnetite (?), but more often oblong or six-sided prisms. Some of these may be apatite, but I am disposed to refer some to felspar. There are several grains of quartz of smaller dimensions than the felspar and hornblende, and a few clusters of small flakes of a brownish mica, rather dirty-looking, and a little magnetite. The ground-mass is mainly a micro-pegmatite, like that figured and described by Mr. Teall. (*British Petrography*, plates xxxv., xlvii.) This material often seems to grow out from the felspar, and perhaps from the hornblende crystals, and, as mentioned above, the felspar therein appears sometimes to have begun by augmenting one of the older crystals of that mineral.

On the whole I think the best name for the rock is a quartz-diorite.

41. This is a pale-coloured coarse granitoid or gneissoid rock, with a rather porphyritic structure, the felspar crystals of which are occasionally about an inch long. The microscope shows the slide to be composed of quartz, containing rather numerous enclosures, chiefly little cavities with small bubbles, felspar, white mica, and a good-sized grain of brownish hornblende, with some dark granules or grains, probably hematite. The felspars are rather decomposed, and one is a plagioclase; but the larger crystals resemble orthoclase. These not unfrequently contain grains from about .02 in diameter downwards, sometimes oblong, often rather irregular in outline, which also are felspar, and must indicate an earlier stage in consolidation. These and the enclosing felspars much remind me

⁶ *Quar. Jour. Geol. Soc.*, May, 1889, p. 175.

of the mineral in the gneissoid granite of the St. Gothard Pass. One or two rounded grains of quartz are also enclosed. These too contain some fluid cavities.

The rock is a granite, probably slightly modified by subsequent pressure. It reminds me of some of the granites of Cornwall or Devon.

42. A moderately finely crystalline rock, speckled lighter and darker grey, looking like a granite, with possibly a slight foliation. The rock consists of quartz, felspar (orthoclase and plagioclase), and a considerable quantity of brown mica, with a rich colour and strong dichroism. Now and then there is a little white mica; but as this usually includes plates of opacite between its cleavage planes, it may be generally the result of a bleaching of the brown mica, which would thus appear to be very possibly Haughtonite. The ordinary green decomposition product does not appear. Among the more minute mineral constituents are one or two zircons, and a few grains, sometimes imperfectly-formed prisms, of a sienna-brown mineral, which is not improbably rutile. I consider the rock to be a granite, which has been slightly fractured by pressure and reconsolidated; for here and there a little somewhat chalcedonic quartz appears, looking as if it had "soldered up" a crack.

43. This rock bears a slight superficial resemblance to No. 1; but the felspar grains are smaller and more scattered, there is more matrix, and the conspicuous grains of the dark mineral are wanting. The microscope shows grains of quartz and felspar, and clusters of rather small flakes of biotite, scattered in a microgranular matrix of quartz and felspar, with occasional flakes of biotite or a greenish mineral, possibly a chlorite or a variety of hornblende, with sometimes a certain amount of ferrite staining. The quartz is in rather rounded grains, and contains occasionally enclosures of a material resembling the matrix. The felspar varies much in its state of preservation, some grains being very decomposed, others rather clear. Plagioclase is present, but much of it resembles orthoclase. The outline of the grains is often very irregular, suggesting that we have only the fragments of larger crystals, which have suffered from corrosion. These present considerable resemblance to the larger crystals in No. 41, and sometimes contain similar enclosures of other felspars. Some grains appear as if there had been (as in No. 1) slight subsequent additions; others are pierced by the ground mass. In this also small irregular grains of felspar can be distinguished, as if they were the last remnants of larger crystals. I think that after quartz and fair-sized crystals of felspar had separated out of the magma of the rock, these had again been partially dissolved, after which the rock had finally consolidated. Perhaps we may call it a quartz-felsite, unless we prefer to name it a microgranulite. (See Fouqué and Lévy, *Minéralogie Micrographique*, pl. x.)

ELIZE HELE.

BY WINSLOW JONES.

(Read at Tavistock, August, 1889.)

AMONG the early benefactors to whom we are indebted for educational and charitable endowments in Devon and Exeter, Elize Hele,¹ of Fardle, or Fardell, in the parish of Cornwood, who was formerly known as "Pious uses Hele," holds the foremost place; and as the notice of him in Prince's *Worthies*, which forms a supplement to his account of Sir John Hele, serjeant-at-law, has errors as well as omissions, a memoir, in which these are attempted to be corrected and supplied, may be of interest.

According to Westcote's *View of Devonshire in 1630*, p. 535, Elize Hele was the elder of the two sons of Walter Hele, of Brixton, near Plymouth, and of Jane, daughter of Thomas Maynard,² of the same parish; and, according to Prince, he was born at "Worston, a house so called in the parish of Brixton," but no such house is marked in the *Ordnance Map*. And in Lysons' *Devon*, p. 74, Wollaton (which lies about half a mile to the north of Brixton Church), is mentioned as the seat of the Heles; and the Rev. Richard Lane, of Coffleet, who was the perpetual curate of Brixton from 1798 to his death, in 1858, also states, in his MS. account of the parish, which was written between 1820 and 1833, that Elize Hele was born at Wollaton. According to Lysons and Mr. Lane, Walter Hele died in about 1613, but his will, in which he was described as of Fardell, was dated 28th September, 1614, published 2nd October following, and proved in the

¹ Elize was sometimes changed into Ellis, and latinized into Elizeus; and Hele occasionally spelt Heale.

² The Brixton branch of the Maynards lived at a house called Sherford, and continued in the parish down to about 1706.

Prerogative Court of Canterbury 13th November, 1614, so that he died in the October or November of that year. Mr. Lane states that "on the floor, near the centre of the chancel of Brixton Church, there was a large stone to his memory, the inscription on which was effaced, but the Hele arms were evident." The church, however, was lately restored, and the gravestone met the too common fate of the memorials of the dead, and disappeared. The parish registers are only extant from 1668, so that the evidence of his burial, and of his son's baptism, is wanting.

As regards the estate of Fardle, it is stated in p. 322 of the *Collections towards a description of Devon*, by Sir William Pole, (who died in 1635,) that "George Raleigh dwelled at Furdell, and died without issue, unto whom succeeded John Raleigh, who also died without issue, and after him Sir Carew Raleigh had Furdell, which he sold unto Walter Hele; and Ellis Hele, Esquire, his sonne, was then (when Sir William wrote) the lord thereof;" and I may add that George and John Raleigh were the sons of Walter Raleigh, the father of Sir Walter, by his first wife, Joan Drake; and that Sir Carew Raleigh was the elder son of Walter, by his third wife, Katherine Champernown, and Sir Walter their younger son.

To the approximate date of Elize Hele's birth a clue is given in vol. i., p. 402, of the *Oxford University Register*, which page is printed in pages 185 and 186 of the Rev. C. W. Boase's *Register of Exeter College*. Following the list of members of that college in 1570 is a list of the matriculations of its members between 30th December, 1575, and 20th December, 1577, and towards the end of that list is the following entry, "Ellys Heale Devon gen[erosi] f[ilius] æt.] 17," and Mr. Boase is confident that the subject of the entry was Elize, the son of Walter, and if so, he was born in 1570, or a year or two before.

His Christian name was derived from Elize Warwyke, of Holbeton, gentleman, who was the second husband of Margery, the second wife of Nicholas Hele, the father of Walter, as shown by an undated codicil to the will of Elize Warwyke, in which Elize Hele is described as his godson; and the will in question bore date 21st June, 1562, and was proved in the Archdeaconry Court of Totnes 17th April, 1563.³ Elize Hele does not appear to have taken any degree at his university, but following the example, and probably the advice, of his uncle

³ The probate of Elize Warwyke's will is in the possession of the Trustees of Elize Hele's Charity at Exeter.

John Hele,⁴ he became a student of the Inner Temple, though in what year does not appear; but, according to the *List of Students admitted to the Inner Temple 1547-1660*, he was called to the Bar in 1590, (when about thirty years of age), and to the Bench in 1603; and, according to Sir William Dugdale's *Origines Juridicales*, he was Reader of his Inn in 3 James I., Treasurer in 12 James I., and Lent Reader in 2 Charles I.

He was twice involved, to use Prince's expression, in matrimony. His first wife was Mary, third daughter of John Hender, of Botreaux Castle, in Cornwall, Esq., on whose death, in 1611, she became one of his four co-heiresses, as mentioned in the inscription⁵ on his monument in Minster Church; and in the Hender Pedigree, in Lieut.-Col. Vivian's *Visitations of Cornwall*, it is stated, on Sir John Maclean's authority, that their marriage settlement was dated 16th December, 1 James I., 1603. His second wife was Alice, daughter and co-heiress of Reginald Bray, of Hinton, in Northamptonshire,⁶ Esq., and widow of Nicholas Eveleigh,⁷ fifth son of John Eveleigh, of Holcombe, in Ottery St. Mary; and the license for this second marriage was granted at

⁴ John Hele, the next brother of Walter, was chosen Recorder of Exeter, in succession to Serjeant Edward Drewe, on 14th July, 1592; was M.P. for Exeter from the beginning of 1592-3 to 19th December, 1601; was made a serjeant-at-law on 29th November, 1594, the Queen's Principal Serjeant on 16th May, 1602, and King's Serjeant on 22nd April, 1603, and a knight on 23rd July following. He resigned his recordership immediately before the appointment of his successor, Mr. William Martyn, on 19th December, 1605, and died 4th June, 1608, in his sixty-sixth year. Serjeant Woolrych, in his account of Sir John, in his *Lives of Eminent Serjeants-at-Law*, makes several mistakes. In p. 172 he says that Matthew Hele was Sheriff of Devon in 1560, instead of in 1660; that Sir John was fourth son of Nicholas Hele (Walter's father), instead of his fourth son by his second wife; and that he was born in 1565, instead of in about 1543; and in page 180 that Elizæus Hele was Sir John's cousin instead of his nephew. In p. 173 also he refers to a speech by Sir John in the House of Commons in the time of Queen Elizabeth, but, like Prince, omits to state that he was Member for Exeter during the period above mentioned.

⁵ An accurate copy of the inscription is given in Sir John Maclean's *History of the Deanery of Trigg Minor*, vol. i. p. 609.

⁶ Westcote, in page 535, refers to Alice's father as "Bray of Northumberland;" and Prince repeats the error; and Dr. Oliver follows him in his *Ecclesiastical Antiquities of Devon*, vol. i. p. 83.

⁷ Among the documents in the possession of the trustees of Hele's Charity at Exeter there is a grant to Nicholas Eveleigh of the stewardship of the Stannaries of Devon, dated 29th November, 4 James I., 1606, in which he is described as of the Middle Temple, Esq.; and there are also three appointments of him as steward of the Court Leet of the manor and borough of Bovey Tracey by James I. in the 9th, 10th, and 15th years of his reign; and he was buried at Bovey on 10th March, 1617-8. His will, dated 13th October, 42nd Eliz., 1600, by which he appointed his wife Alice his residuary legatee and sole executrix, and a codicil, dated 3rd November, 9 James I., 1611, were proved by his widow in the Prerogative Court of Canterbury on 11th May, 1618, (MEADE, 39).

Exeter, as stated in Lieut.-Col. Vivian's *Marriage Licenses of the Diocese of Exeter*, now in course of publication, on 19th March, 1618-9, but, although the lady was described in the licensè as of Bovey Tracey, there is no entry of the marriage in the beautifully kept register of that parish, which the vicar kindly allowed me to examine.

The mother of Alice Hele was Anne, daughter of Thomas, second Lord Vaux, of Harrowden; and a pedigree of her father's family is given in p. 176 of vol. i. of the *History of Northamptonshire*, compiled from the MS. collections of John Bridges, by the Rev. Peter Whalley; and in p. 178 of the same volume it is stated that a hospital for two poor widows was erected at Hinton by Alice Hele and her husband, with a yearly endowment of £3 10s. for each widow; and that over the hospital door was this inscription: "Ex sumptibus Elizæi Hele Com. Devon. Armigeri Mariti Aliciæ Hele filiæ et cohæredis Reginaldi & Annæ Bray qui sepeliuntur in templo hujus parochiæ."⁸

According to the Hele pedigree in Dr. Colby's *Visitations of Devon in 1620*, which was signed by Elize Hele, there was only one child of his first marriage, namely, Walter Hele, who was then nine years of age; but he died in the beginning of January, 1623-4, and was buried on the 12th of that month at Bovey Tracey; and it appears from some of the charity documents that Elize Hele lived at Parke in that parish, which was devised by Nicholas Eveleigh to his widow for her life, and is now the residence of Mr. William Hole, for the greater part of the period between his second marriage and death.

By a feoffment, dated 9th January, 1632-3,⁹ and made between Elize Hele of the one part, and John Maynard, Esq.,¹

⁸ The rector of Hinton informs me that the inscription still remains, and that the charity is of great benefit to his small parish.

⁹ I have not been able to find this deed among the documents relating to Elize Hele's Charity either at Plymouth or Exeter; and its contents are taken from the *Fifth Report of the Commissioners for inquiring into Charities*, (vol. 8, part I.), and a copy of which, as regards Devon and Exeter, was reprinted at Exeter in 1825 and a few subsequent years.

¹ Memoirs of John Maynard are given in Lord Campbell's *Lives of the Chancellors*, vol. iv. p. 8 and post, in Foss's *Lives of the Judges of England*, vol. vii. p. 535 and post, and in Serjeant Woolrych's work before referred to; but no life of him is given by Prince; and a pedigree of the Maynard family is given in Dr. Colby's *Visitation of Devon in 1564*. He was born at Tavistock in 1602, was a student, like his father, of the Middle Temple, was made a Serjeant-at-law, 21st February, 1653-4, the Lord Protector's Serjeant, 1st May, 1658, Serjeant to Charles II. and a knight on 9th November, 1660, and Lord Commissioner of the Great Seal on 21st March, 1688-9; and he was a member of nearly all the Parliaments from 1640 to his death, which took place on 9th October, 1690.

John Hele, of Wisdom,² Esq., and Elize Stert, of Brixton, gentleman, of the other part, the said Elize Hele, having a pious intention and meaning to advance the honour of God in dedicating his estate to some charitable and godly use, and reposing much confidence in Alice Hele his wife, and in the said John Maynard, John Hele, and Elize Stert, granted to the said John Maynard, John Hele, and Elize Stert, and their heirs, the manors of Fardell and Denaton [in the parish of Cornwood], Brixton Reigny [in the parish of Brixton], Cofflute [in the parish of Yealmpton], Halwill [in the parish of that name], Teign Harvey [in the parish of Stokeinteignhead], Clist St. Lawrence³ [in the parish of that name], and Clist Gerard [in the parish of Broadclist], in the county of Devon, and the rectories impropriate of Wolrington⁴ and St. Giles-in-the-Heath, in the same county, and all other his manors and lands in the said county or elsewhere in England, to the use of the said Elize Hele for life, and after his decease to the use of the said Alice Hele, John Maynard, John Hele, and Elize Stert, and their heirs in trust with all convenient speed to employ the said premises to some godly, pious, and charitable use and uses, as they or the survivors or survivor of them and their heirs in their discretion should think meet.

Elize Hele died on 11th January, 1635-6, and was buried in St. Andrew's Chapel, in Exeter Cathedral, then, or afterwards, the Canon's vestry, on the 4th of February following; and in the entry of his burial in the Cathedral register he is described as "Ellys Heale Esquier." His burial is also entered in the register of Allhallows, Goldsmith Street, Exeter, and he was probably residing in that parish at the time of his death. His wife Alice survived him for nearly six months, and on 24th March, 1635-6, gave "£300 in gold as a free gift to be bestowed in the repairing and bewtififying of the chapel of St. John" at Exeter, and the sum was duly expended by the Chamber of Exeter in accordance with her wishes;⁵ and I presume that the arms of Hele, impaled with those of Bray, which were formerly in one of the windows of the chapel, were placed there by the Chamber

² Wisdom is an ancient house and estate in the parish of Cornwood, near the river Yealm, and a little above Blachford, the beautiful seat of Lord Blachford, and the property has been long in the possession of his lordship's family. The house is now occupied by the tenant of the farm.

³ The manor of Clist St. Lawrence was bought in 1593 by Walter Hele, the father of Elize, from Hugh Pollard, Esq., of King's Nympton, for £1900.

⁴ Wolrington is printed Woolrington in the report, and in Elize Hele's will it is called Wolrington, *alias* Worlington.

⁵ *Act Book of the Chamber of Exeter for 1634-41*, pp. 34 b, and 46 b.

as a memorial of the gift. She died on 20th July, 1636, and was buried in the same chapel with Elize.

Plain gravestones, side by side, cover their remains, with the following inscriptions:

"Here lyeth buried y^e body of Elize Hele late of Fardle in Cornwood Esq^r who died y^e xith of January 1635."

"Here lyeth interred the Body of Alice Hele widowe late y^e wiffe of Elize Hele late of Fardle Esquier who dyed the 20th day of July 1636."

Her burial is entered in the Cathedral register under the date of the 28th of July as "M^{rs} Alice Hele Widdowa."

The arms of Hele, with a crescent for difference, are cut on the gravestone of Elize, and the arms of Bray on that of his widow, the former being, Gules, five fusils in bend ermine, and the Bray arms, Argent, a chevron between three eagles' legs erased sable, armed gules.

Prince complained that no more decent memorial was erected to Elize Hele than the gravestone in the Canons' vestry, but he was not aware of the monument to him on the south side of the chancel of Bovey Tracey Church, which is fully described by Dr. Oliver in p. 81 of the first volume of his *Ecclesiastical Antiquities* before referred to. The monument is of alabaster, without inscription, and contains the effigy of Hele, in a recumbent posture, with three kneeling figures below, representing his two wives and his son by the first; and in addition to the arms of Hele and Bray there are the arms of his first wife, Mary Hender—Azure a lion rampant between an orb of escallop shells Or; while on the north side of the chancel there is a freestone monument to Nicholas Eveleigh, with his recumbent effigy, and his arms—Per pale Or and Sable, a chevron between three griffins passant counterchanged, as also a second shield with the arms of Bray. The only inscription on this monument is "1620 I D," and the year may be the date of its erection, and the initials those of the statuary.

Copies of the Wills of Elize Hele and his widow, which have not been before printed, so far as I am aware, are subjoined.

It is beyond the scope of the present paper to describe the trusts created under the feoffment of 9th January, 1632-3, but it may be stated that in 1649 some temporary trusts were declared by Serjeant John Maynard and Elize Stert, the then surviving trustees, by three separate indentures, of which one only is mentioned in the Charity Commissioners'

Report, and that the general trusts were not declared until 1658, in which year two distinct schemes were created by the Serjeant and E. Stert by deeds bearing date the 7th of September and the 18th of December. Under the former of these deeds various manors and estates in the parishes of Brixton, Yealmspton, Halwell, Harberton, Blackawton, Ugborough, Modbury, Sheepstor, Meavy, Plympton St. Mary, Plympton Maurice, and Mary Tavy, and various trust funds, the joint income of which amounts to about £800 a year, are now vested in trustees residing in Plymouth and the neighbourhood in various trusts; and under the latter deed various manors and estates in the parishes of Stokeinteignhead, Clist St. Lawrence, Broadclist, Bovey Tracey, and Newton Ferrers⁶ are now vested in trustees residing in Exeter and the neighbourhood upon the trusts declared by a scheme approved by Her Majesty in Council on the 28th of April, 1876; and the gross yearly rental of these last-mentioned estates now amounts to about £1550, to which about £350 a year will probably be added on the expiration of some leases now held on single lives.

I have to thank the Rev. C. W. Boase for information as to Elize Hele's matriculation at Oxford, and Mr. Woollcombe, of Plymouth, and Mr. Daw, of Exeter, the respective clerks of the two sets of Charity Trustees, for allowing me to examine the deeds in their possession; and have to state in conclusion that when the chapel at St. John's Hospital was taken down in 1879, and the Exeter Grammar School removed to a new site at Heavitree, the arms of Hele and Bray, which had been placed in one of the windows of the chapel, as before mentioned, were allowed to fall into private hands, fortunately into those of Mr. Frederick Drake; but I am happy to add that these memorials of worthy benefactors, with a few other arms—some old and some modern—which had shared the same fate, have lately been placed, with the permission of the governors of the school, and under Mr. Drake's superintendence, in some of the windows of the new dining-hall, of which, in the opinion of the present headmaster and others, they form an interesting ornament.

⁶ No property in Cornwood is held by either set of trustees, and on Alice Hele's death Elize's heir-at-law established a claim to the manors of Fardell and Denaton in that parish. The ancient house and estate of Fardell now belong to Mr. John Duke Pode, of Slade, in Cornwood, whose great uncle bought them from Sir Robert Palk.

COPY OF THE WILL OF ELIZE HELE. (Pile 2.)

"In the name of God Amen I Elize Hele of the Cittie of Exeter Esquier . . . doe make and ordaine this my Will in manner and forme following . . . I give to the Churchwardens of the parrish of Bovytracy in the Countie of Devon the somme of fortie pounds to remaine for a Stock for ever to the use of the said Parrish, and the profitts thereof yearly encreasing to be ymployed by the Churchwardens and Overseers of the poore of the said parrish for the tyme being to the use of the poore of the sayd Parrish, and to be distributed in such manner as they in their Judgments shall thinke meete. Item I give unto the poore of the parishes of Cornwood and Brixton Sixe Pounds (that is to say) to the poore of each of the said parishes Three pounds. Item I give to the poore of the Parishes of Plympton Mary and Yealmpton Fower pounds (that is to say) to the poore of each of the said Parishes Fortie shillings. Item I give to the poore of the parishes of Plympton Morris, Plymstock, Newton Ferrers, Revelstock, Holbeton and Modbury Six pounds (that is to say) to the poore of every of the said parishes Twenty shillings. Item I give to the poore of the parrish of Sainte Sidwylls without the East gate of the Cittie of Exeter Three pounds, and to the poore of the parish of St Maries the More within the said City of Exeter Forty shillings, and to the poore of every other parishe within the said City of Exeter Twenty shillings. Item I give vnto my servant Richard Burdwood Twenty Pounds, and I forgive vnto him the Thirty pounds which he oweth vnto me. Item I give to every one that shalbe my household Servante at the tyme of my death Forty shillings. Item I give to Hanniball Corbyn my miller forty shillings, and to John Cullinge Forty shillings. All the aforesaid legacies to be paid within sixe moneths after my decease.

"Item I doe devyse lymitt and appoint vnto my dearly beloved wiffe Alice Hele my Capitall messuage Barton Demesnes and Mills of Fardle, And all those my Milles in the parish of Bovy tracy commonly called Bovy tracy Mills And all that the Rectory and parsonage impropriate of Wolrington als Worlinton and St Giles with the members and appurtenances thereof, to have and to hold vnto my said wife and her assignes during her lyffe. And whereas I and my brother Andrew Pollexfen are joyntly estated in the milles of Yealmpton for and during our lives, and the longest liver of vs; I doe intreat my said brother according to the trust reposed in him that he permitt my said wife her executors and assignes to enjoy and take the yssues and profitts of the said Mylles during his life. And vnto my said brother, and vnto my loving kinsman John Pollexfen of Kitley, and John Pollexfen his sonne, and to my brother in lawe James Eveleigh I give to every of them a Ring of Gold of the value of Forty shillings. And the residue of all my goods and Chattels my debts

and legacies being paid I give and bequeath unto my aforesaid deare and loving wiffe, whom I doe make my sole and whole Executrix of this my last will and Testament. And I doe intreate my loving kinsman John Maynard of the middle Temple London Esquier John Hele of Wisdom in the parish of Cornwood Esquier, and Elize Stert of Brixton gent. to be Overseers of this my last will and Testament intreating them to be ayding and assisting vnto my said wife in the Execution of this my last will, and in all other occasions as she shall have need to vse them. And vnto every of them I give Five Pounds in gold as a Testimony of my love to them whilst I lived. In witnes whereof I the said Elize Hele have hereunto sett my hand and seale yeoven the Third day of October In the Nynth yeare of the raigne of o^r Soueraigne Lord Charles by the grace of God [&c.] Annoque Domini 1636 [a mistake, probably in the copy, for 1635]

“ Elize Hele

“Signed sealed and published in the presence of Roger Mallacke, James Collyns, Gilbert Collyns, Nathaniell Salter, Robert Wills, Thomas Geall.”

The will was proved by the said Alice Hele, in the Prerogative Court of Canterbury, on 25th January, 1635-6.

The said Alice Hele died on 20th July, 1636, and on the 29th of the same month administration with the said will annexed was granted, by the same court, to Thomas Hele, the nephew and next of kin of the said Elize Hele, as to his goods left unadministered by the said Alice Hele.

COPY OF THE WILL OF ALICE HELE. (Pile 109.)

“In the name of God Amen. I Alice Hele of the Citty of Exeter Widdowe . . . make and ordayne this my last will and testament in manner and forme following. . . . My body to be buried in the Chappell in St Peters Church as neere as conveniently may be to my late deceased husband Elize Hele Esquier. Item I give and bequeath to the Church wardens of the parish of Bovitracry in the County of Devon the somme of Twenty pounds upon corresponding trusts as those contained in my said husband's Will of the legacy of £40 bequeathed by him for the use of the poor of the said parish. Item I give and bequeath to the fower children of Edward Stevens of Sadbury Esquier my loving kinsman to each of them Tenn poundes. I give and bequeath to the seaven children of . . . Curson Esquier my loveing kinsman to each of them Tenn poundes. Item I give to Salathiell Grew my nephew one silver Cupp of the value of Five poundes. Item I give to John Ingolsby my nephew the somme of Tenn poundes. Item to my kinsman Frauncis Bray Tenn poundes. I give to my servant Richard Burdwood tenn poundes and to Walter Burdwood

his sonne tenn poundes and to each of my household servants Forty shillings. All other my Goodes and Chattells not hereby given I hereby bequeath to my trusty and welbeloved frendes Edward Stephens of Sadbury Esquier John Maynard of the Middle Temple London Esquier Frauncis Strood of Ideford Clerke Frauncis Bray gent and Richard Burdwood of West Allington Yeoman whom I make and ordayne my Executors In witness whereof I have herevnto sett my hand and seale the eight day of July in the twelfth yeare of the raigne of our Sovereigne Lord Charles Annoque Domini 1636.

“Signum Aliciæ Hele.

“Signed sealed and published in the presence of Richard Harte, Christopher Eaton, Thomas Harte, Hanniball Corbyn, John Culling, Sackville Earbery.

“Memorandum that Mistris Alice Hele at the tyme of the publishing hereof declared that it was her farther mynde and last will That John Maynard within named should after her decease have her right in Parke and all lands thereunto belonging together with the furniture of the house And then shee published the same as her last will.”

Witnesses the same persons as those who witnessed her will, with the addition of Jane Pinsent.

The will and codicil were proved in the Prerogative Court of Canterbury on November 4th, 1636, by all the executors, the name of the Rector of Ideford being spelt “Strode.”

A FEW SHEAVES OF DEVON BIBLIOGRAPHY,

GLEANED BY JOHN INGLE DREDGE.

(Read at Tavistock, August, 1889.)

"To attend to the neglected, and to remember the forgotten."—BURKE.

"It is an error in bibliographers and editors to give only the titles of old books from the original title-pages without adding the imprints of the publishers. Much historical and biographical information lies in such imprints."

MASSON'S *Life of Milton*, 8vo, vol. v. p. 678.

REFERENCE.—B.M., British Museum Library; Bod., The Bodleian Library; Dr. W.'s Lib., Dr. D. Williams's Library; J.I.D., The Writer's Library; [pp. iv.] so inclosed denotes that those pages are unnumbered.

The title of any book not yet actually examined is given within square-headed brackets [.....], with the authority.

The First Sheaf.

HUGHES (GEORGE), B.D.

Born in the Borough of Southwark in 1603. Entered Corpus Christi Coll. Oxon. 1619. B.A. 19 Feb. 1622. Chosen Fellow of Pembroke . M.A. 23 June 1625. Ordained about 1628. Exercised his ministry first in or near Oxon.; then Lecturer of All Hallows, Breadstreet, London. B.D. 10 July 1633. Silenced by Abp. Laud. Presented to Tavistock and admitted 7 April 1638. Vicar of St. Andrew's Plymouth, in 1644. Ejected thence in 1662. Died at Kingsbridge, Devon, 3 July, 1667, in the 64th year of his age.

Cf. Calamy's *Account*, 222, and *Continuation*, 253; Wood's *Ath. Oxon.*, iii. 777, and *Fasti*, i. 405, 423, 469; Oliver's *Monasticon*, 93; Palmer's *Noncon. Memorial*, 2nd edit. 1802, ii. 56-62.

1. The Saints Losse and Lamentation. A Sermon preached at the Funerall of the Worshipfull Captaine Henry Waller,

the Worthy Commander of the Renowned Martiall Band of the Honourable City of London, exercising Armes in the Artillery Garden. Octob. 31. 1631. By George Hughes, Mr. of Arts and Preacher of God's word in Alhallowes Breadstreet in London. Psal. 116. 15. Precious in the sight of the Lord, is the death of his Saints.

LONDON, Printed by I.B. for RALPH MAB 1632.

- 4to. Title and Dedication to the "President, Capitaines, and Gentlemen, exercising Armes in the Artillerie Garden of London, 3 leaves; Sermon on 2 Kings, xiii. 14, pp. 56. [Bod.]

2. The Art of Embalming Dead Saints, discovered in a Sermon preached at the Funerall of Master William Crompton, the late Reverend and faithfull Pastor of the Church in Lancelton Cornwall. Ianuary the fifth, 1641. By G. Hughes B.D. Pastor of the Church in Tavistocke Devon.

Mors lucrum.

Phil. 1. 21.

Sepulchrum cubile.

Essay 57. 2.

Infernum nihil.

Heb. 2. 14.

Fides victoria.

1 John 5. 4.

Imperatrix sanctitas.

Essay 49. 7, 8.

Dei & Christi. Hæc sunt Sanctorum trophæa.

LONDON, Printed by A. N. for John Rothwell, and are to be sold at his Shop in Pauls Churchyard, at the signe of the Sun, 1642.

- 4to. Title, 1 leaf; Epistle Dedicatorie "To the Worshipfull the Major, Recorder, and Aldermen of the Towne of Lancelton in Cornwal," dated "From my study in Tavistock, March 28, 1642, George Hughes," and "To the Reader," 3 leaves; Sermon on Ps. xvi. 10, pp. 52.

From the address to the Reader, it seems that about a year before—"not yet a yeare since"—Hughes preached this sermon "at the Funeral of a dear Christian Friend once of my Flock in London," "All Hallows in Breadstreet." The friend's name was "Master John Underwood." [J.I.D.]

3. A Dry Rod Blooming and Fruit-bearing. Or, a treatise of the Pain, Gain, and Use of Chastenings. Preached partly in several Sermons, but now compiled more orderly and fully for the direction and support of all Gods Chastened that suffer either in Christ, or for Christ in these dayes. By G. Hughes, B.D. Pastor of the Church in Plymouth. [Quotations, 5 lines.]

London, Printed by *T. Paine* for *John Rothwell* at the Sun in *Pauls Churchyard*, 1644.

- 4to. Title and Ep. Ded. "To the Right Worshipful the Major, Recorder, and Aldermen of the Town of Plymouth, with all that love the Lord in sincerity even unto deepest sufferings in that place," dated "Lond. May 11th, 1644," 4 leaves; pp. 119. [Mr. J. Brooking Rowe.]

Calamy and Palmer both blunder over the title of this book, describing it as "Aaron's Rod Blossoming."

4. Væ-Euge-Tuba. Or, The Wo-Ioy-Trumpet, Sounding the third and greatest woe to the Antichristian world, but the first and last joy to the Church of the Saints upon Christs exaltation over the Kingdomes of the World. Unfolded in a Sermon before the Honourable House of Commons assembled in Parliament, at their late solemne Fast, May 26, 1647. By G. Hughes Minister of the Gospell in Plymouth. Published by order of the House. Prov. 8. 15...Obad. v. 21...

LONDON, Printed by *E. G.* for *John Rothwell* at the Sunne and Fountaine in *Pauls Church-yard*. 1647.

- 4to. Title with Order for Thanks, &c., at back, 1 leaf; Ep. Ded. to the Commons, 3 leaves; Sermon on Rev. xi. 15, pp. 38. [J.I.D.]

5. A Three-Fold Cord to unite Soules for ever unto God. 1. The Myserie of Godlinesse opened. 2. The Imitation of Christ proposed. 3. The Crowne of afflicted Saints promised. As it was compacted by M. Richard Head, M.A. and sometimes Minister of the Gospel, in his Labours at Great Torrington in Devon. Published now, after his Death, for publike profit. Eccles. 4. 12. . . .

LONDON, Printed by *E. P.* for *Fr. Coles*, and are to be sold at his shop in the *Old-Bayly*, at the Signe of the Halfe-Bowle, 1647.

- 4to. Title, 1 leaf; "To the Readers," by the publisher of the vol., "Geo. Hughes," 1 leaf. Sermons on Jas. i. 12; 1 Tim. iii. 16; Matt. xix. 28, pp. 50. [J.I.D.]

6. The Joint-Testimonie of the Ministers of *Devon*, whose names are subscribed; with their Reverend Brethren the Ministers of the Province of *London*, unto the truth of Jesus. With a brief Confutation of the Errors, Heresies, and blasphemies of these times, and the toleration of them. In pursuance of the solemne League, and Covenant of the three Nations. [Quotations, 2 Cor. 13. 8, and 2 Tim. ii. 11, 12, 5 lines.]

LONDON, Printed by *William Du-gard* for *Ralph Smith*, at the Sign of the Bible in Corn-hill, 1648.

- 4to. Title with a letter at the back to the Ministers of London, 1 leaf; pp. 36. The tract is subscribed by 74 names as under:—

Georg Hughes Minister in Plymouth.
Alexander Grosse Minister in Ashburton.
Francis Widden Minister in Mooreton-Hamstead.
John Seager Minister of Broadclift [sic].
Anthony Harford Minister of Partmouth [sic].
Ferdinando Nicolls Minister of Mary Arches Exon.
Thomas Eord [sic] Minister in Exon.
John Bartlet Minister of Mary the More in Exon.
Thomas Downe Minister of Pauls in Exon.
Mark Down Minister of Petrocks in Exon.
Edmund Pearse Minister of Crediton.
Robert Snow Minister of Morchard.
Francis Bernard Minister of Awton-Gyfford.
Thomas Trescot minister of Shobrook.
Thomas Whitborne minister of Upton-Hellyns.
Nathanael Durant Pastor of Cheriton.
John Hopkins minister of Sandford.
Thomas Ceely minister of Lapford.
John Preston minister of Tharverton [sic].
Peter Osborne minister of Jacobstow.
William Trevithick minister of Hatherly.
Anthony Down minister of North-Ham.
John Way minister of Kingsbridg.
Georg Pitt minister of West-Alvington.
Thomas Bridgman minister of Inwardleigh.
Thomas Sprat minister of Taliton.
Richard Babington minister of Sidberry.
Ames Short Pastor of Topisham.
Thomas Wilcock minister of Powderham.
Samuel Fones Pastor of Woodbery.
John Buckley minister of Thurlestone.
Humphrey Dyer Pastor of Islington [sic].
Ambrose Clare minister of Poltimore.
Philip Serle Pastor of Whimble.
John Serle Pastor of Aroliscombe.
Richard Cresson Pastor of Axminster.
Georg Hammond minister at Mamhead.
William Yeo minster [sic] of East Buckland.
John Garret minister of Totnes.
Richard Conant minister of Otterton.
John Hill minister of North-Moulton.
John Beare minister of Chittle-Hampton.
William Yeo minister of Newton-Abbot.
William Bowden minister of Ashton.
William Stooke minister of Dunchidock.
Philip Goddard minister of Sowton.
William Treise minister of the Gospel.
John Forward Pastor of Ottery St. Mary.
William Ball minister of Ottery St. Mary.

Humphrey Saunders Pastor of *Hollesworthy*.
John Stephens Pastor of *East-Ogwell*.
Francis Sorton minister of *Honiton*.
Richard Bickley minister of *Denberry*.
William Baily minister of *Stoakflemming*.
William Randall minister of *Berrey pomrey*.
Thomas Lovays minister of *Dartington*.
Andrew Gove Pastor of *Petertavy*.
John Barnes minister of *Abbotskerswell*.
Nathaniel Terry Pastor of *Painton*.
Josias Gale minister of *West-Buckland*.
John Read minister of *Ilfarcomb*.
Christopher Iellinger minister of *Brent*.
Robert Stidston minister of *Mary Church*.
William Collins minister of *Modbury*.
Francis Porter minister of *Plimmouth*.
Thomas Trevers minister of *Plimmouth*.
Joshua Morrice Preacher of the Gospel at *Buzham* [sic].
Thomas Frend minister of *Blackanton* [sic].
Alexander Skinner minister of *Gittisham*.
Iohn Herring minister in *Maristow*.
Joseph Squire minister of *Lifton*.
Richard Hancock minister of *North-Petherwin*.
 [Dev. & Exet. Institution Lib., & Mr. Alfred Wallia.]

7. *Sure-Footing in Christianity Examined*. By G. H. The Testimony of the Lord is sure, making wise the simple, Psal. 19. 7. My Foot standeth in an even place: In the Congregation will I bless the Lord, Psal. 26. 12. Ye are built upon the Foundation of the Apostles and Prophets, Jesus Christ himself being the chief Corner-Stone, Ephes. 2. 20. LONDON, Printed in the Year, M.DC.LXVIII.

8vo. Title and Epistle Dedicatory "To the Most Ingenious and Ingenuous Gentry in the Kingdome of England who seriously mind Eternity," 8 leaves; "The Preface to the Intelligent Reader, Examined," 8 leaves; *Sure Footing Examined*, pp. 311. [J.L.D.]

8. *Aphorisms, or Select Propositions of the Scripture shortly determing the Doctrin of the Sabbath*. Written by George Hughes, B.D. [Hebrew quotations, 5 lines.] Printed ANNO DOM. cId Idc LXX.

Small 8vo. pp. 301. The volume is evidently printed abroad; and is dedicated "To the right honorable The Lady Margaret Boscawen" by O. Hughes, and dated April 23. 1670. [J.L.D.]

9. *An Analytical Exposition of the whole first Book of Moses, called Genesis, and of xxiii chap. of his Second Book, called Exodus*. Wherein, the various Readings are observed,

the Original Text explained, doubts resolved, Scriptures paralleled, the Scripture Chronology from the Creation of the World to the giving of the Law at Mount Sinai cleared, and the whole illustrated by Doctrines collected from the Text. Delivered in a Mornings Exercise on the Lords Day, By George Hughes, B.D. Late Minister of the Gospel in Plymouth. Devon. [Quotations, 10 lines.]

Printed Anno Domini M.DC.LXXII.

Folio. Title, 1 leaf; "To the Inhabitants of the Town of Plimmouth in Devon, who were the late Charge and Auditory of the once laborious and now happy Author," by O. Hughes, 2 leaves; "To the Reader," 2 leaves; "The Authors Preface," 1 leaf; pp. 954.

At the end of Genesis, p. 620, is "This exposition was finished, April 3. 1659. being a morning exercise on the Lords Day." On the next page Exodus begins "April 10. 1659;" and at the end on p. 954 "Mandavit Deus hic manum de tabulâ. Aug. 24. A.D. 1662."

Wood says this book was printed at Amsterdam. The identity of some tail pieces in the "Aphorisms" and in this volume prove that both were printed in the same office.

"A very elaborate and curious work; it is not of common occurrence." (Hartwell Horne's *Introduction*, 9th edit. 1846. v. 311.) [J.I.D.]

In the Catalogue of Messrs. Bull & Auvache (No. 51 of 1884) was this entry:—

"Hughes (George, *Pastor at Tavistock*) A Sermon at Barnstaple, upon occasion of the late happy success of Gods Church in forraine parts. 3s. 6d. 1632."

By return of post I sent for it, but it was sold, and unfortunately no record was made of the purchaser. That there is some error in the description I am sure. No such sermon can be traced, and Hughes was not presented to Tavistock till 1638. There is a sermon of Dr. Geo. Hakewill's of that date, and with a similar title.

Jonathan Hanmer's *Exercitation upon Confirmation*, 8vo, 1657, and 1658, has an Address to the Christian Reader, signed, G. Hughes, Plymouth Aug. 10. 1657, 2 leaves [J.I.D.]

In a scarce tract, *Letters to Mr. Hughes of Plymouth; and Mr. Ford of Exeter in Devon, Concerning the Common Prayer. From Edm. Elis, a Minister of the Gospel of Jesus Christ. London, Printed for R. Royston at the Angell in Ivy-lane. 1660. 4to.* will be found two letters written by George Hughes. [J.I.D.]

'VENNING (RALPH), M.A.

Son of Francis and Joan Venning. Under the Ministry of Rev. Geo. Hughes at Tavistock, about 1638, Venning gave himself to God. Entered Emmanuel Coll. Camb. 1 April 1643 from County Devon as a sizar. B.A. Midsummer 1646. M.A. 1650. Married after July 1660, Hannah, widow of John Cope of London. Ejected for Nonconformity from the Lectureship of St. Olaves, Southwark, in 1662. Afterwards preached to the Independent congregation, meeting at Pewterers' Hall, Lime Street, London, as colleague with Rev. Robt. Bragge. Dyed March 10 1674. *Ætat*, 53. Buried in Bunhill-Fields. In his will, names his mother Johan Venning; brother Nicholas Venning and his children; sister Johan Skirret and her children. He left a daughter Hannah, who died 7 June 1691, and was buried at St. Mary Bothaw, London.¹

Cf.—Calamy's *Account*, 22; *Continuation*, 18; Wilson's *Hist. Diss. Churches in London*, i. 210; Wood's *Ath. Oxon.* iii. 982, 983, 1007; Palmer's *Nonconformist's Memorial*, 1802, i. 174; Granger's *Biog. Hist. of England*, 1824, v. 76; *Notes and Queries*, 6th Ser. xii. 166.

1. *Orthodoxe Paradoxes*, or, A believer clearing truth by seeming contradictions, With an Appendix, called the Triumph of assurance. By Ralph Venning of Immanuel Colledge in Cambridge.

London, Printed by E. G. for I. Rothwell, at the Sunne and Fountaine in Pauls Church-yard, and Hanna Allen at the Crown in Popes-head Alley, 1647.

Very small 12mo. Title, 1 leaf; To the Right Worshipfull, Colonell Fran. West Esquire, Lievtenant of the Tower of London, signed Ralph Venning, 5 leaves; To the Readers, 2 leaves; The Contents, 1 leaf; *Orthodoxe Paradoxes*, pp. 1-74; An Appendix, or The triumph of assurance over the Law, Sinne, the World, Wants, and present injoyment, pp. 75-119; To the Reader, pp. 120-121 with regard to the printers mistakes.

This book was brought out 11 March 1644. [B.M.]

On this little work see Dr. Grosart's *Lord Bacon not the Author of 'The Christian Paradoxes'*, 1864, bearing in mind that what the Dr. says must be received *cum grano salis*.

¹ There is no record of R. Venning's baptism at Tavistock. Among the Marriage Licenses at Exeter is this one:

"1617. May 22. William Venning of Teingtonregis and Joanna Langley of the same."—*Vivian*, p. 56.

I cannot divest myself of the impression that we here have the marriage of his parents; it fits the time. True the Christian name of the father is not correct, but I can produce other instances from these records where I have proof that errors have been made by the scribe in Christian names.

1b. [Orthodoxe Paradoxes. 2nd edition.]

1c. "Orthodoxe Paradoxes, Theoreticall and Experimentall. Or A Believer clearing truth by Seeming Contradictions. With an Appendix, called the *Triumph* of assurance. By Ralph Venning of Immanuel Colledge in Cambridge.

The third Edition, with some Marginall Additions.

LONDON. Printed by *E. G.* for *I. Rothwell*, at the Sunne and Fountaine in Pauls Churchyard, and *Hanna Allen* at the Crown in Popes-head Alley 1650."

Sm. 8vo. Title, 1 leaf; Dedication to "Colonell Frances West Esquire, Lieutenant of the Tower of London," 2 leaves; To the Readers, 1 leaf; The Contents, 1 leaf; pp. 44. "To the Reader. Reader, if in any thing which concerns the Printer, you meet with errata's, you are desired to correct them and to excuse him," 1 leaf. [J.I.D.]

1d. [Orthodox Paradoxes. 4th edition.]

1e. Orthodox Paradoxes, Theoretical and Experimental, or, A Believer clearing Truth by seeming contradictions. With An Appendix called The Triumph of Assurance. By Ralph Venning. The fifth Edition.

London, Printed for John Rothwell and L. Chapman, at the Sun and Fountain in Pauls Church-yard, and Crown in Popes-head-Alley. 1652.

Small 8vo. Title, 1 leaf; To Colonell Francis West, 1 leaf; [The copy examined is defective between the dedication and the commencement.] Orthodox Paradoxes, pp. 1-14; Miscellaneous Paradoxes, pp. 15-24; An Appendix or the Triumph of Assurance, pp. 25-38. [B.M.]

1f. "Orthodox Paradoxes, Theological (*sic*) and Experimental. Or, A Believer clearing truth by *seeming* contradictions. With an Appendix called the *Triumph of Assurance*. By Ralph Venning. *The sixth Edition*.

LONDON, Printed for *J. Rothwell*, at the Fountain and Beare in Goldsmiths-row in Cheapside. 1654."

Sm. 8vo. Title, 1 leaf; Dedication to Colonell West, 1 leaf; To the readers, and The Contents, 1 leaf; pp. 36. [J.I.D.]

1g. "Orthodox Paradoxes, Theoretical and Experimental. Or, A *Believer*, clearing truth by *seeming* contradictions. With an Appendix called the *Triumph of Assurance*. By Ralph Venning. *The seventh Edition*.

LONDON, Printed by *S. G.* for *J. Rothwell*, at the Fountain and Bear in Goldsmiths-row in Cheapside. 1657."

Sm. 8vo. Same description as 6th edition. Then follows, "Orthodox Paradoxes : Or, A Believer clearing truth by

seeming contradictions. *The second Part.* By Ralph Venning. [2 Cor. 4. 3, three lines.] LONDON, Printed by S. G. for (as above). 1657." Title, dedication to Rev. Geo. Hughes, and To the Reader, 5 leaves; pp. 39. [The No. of Paradoxes 309.] The signatures shew that this second part and the 7th edition of Orthodox Paradoxes, are one publication. [J.I.D.]

2. The New Command Renew'd: Or, *Love one another.* Being an endeavor after the *Vnity* of the *Spirit* in the bond of *Peace*, by severall *Vniting Principles*. Among which there are *ten Rules* for a *right understanding* of *Scripture*, very usefull for these divided Times. By Ralph Venning. [Psal. 133. 1. three lines.]

LONDON, Printed for *John Rothwell*, at the Sun and Fountain in PAULS Churchyard. 1650.

Sm. 8vo. Title, 1 leaf; To all who professe love to the Lord Jesus &c. signed Ralph Venning (five lines of errata follow Venning's signature) 7 leaves; The New Command &c. pp. 48. [J.I.D.]

"The most of these *heads* were preacht at the *Tower of London*." (Sig A 4.)

2b. The New Command Renew'd: or Love one another. Being an Endeavour after the Unity of the Spirit in the Bond of Peace, by several Uniting Principles. Among which there are ten Rules for a Right understanding of Scripture, very useful for these divided times. By Ralph Venning. [Psal. 133. 1, 3 lines.]

London, Printed for John Rothwell, at the Sunne and Fountain in Pauls Church-yard. 1652.

Small 8vo. Title, 1 leaf; To all who possesse love to the Lord Iesus, and yet love not one another, according to his example and command, signed Ralph Venning, pp. 1-5. The New Command Renewed, pp. 7-50. Signatures very irregular; Title and leaf 1, no signature; then A, 3 leaves, D, 5 leaves, B, 8 leaves, C, 8 leaves. [B.M.]

2c. "The New Command Renew'd. Or, Love one another. Being an Endeavour after the *unity* of the *Spirit* in the bond of *Peace*, by severall *Uniting Principles*. Among which there are *Ten Rules* for a *right understanding* of *Scripture*, very useful for these divided times. By Ralph Venning. [Psal. 133. 1. three lines.]

LONDON, Printed for *J. Rothwell*, at the Sun and Fountain in Goldsmiths-row in Cheapside. 1654."

Sm. 8vo. Title, 1 leaf; To all who professe &c. and The New Command &c. pp. 52. [J.I.D.]

2d. "The New Command Renew'd: or, *Love one another*. Being an endeavour after the *unitie* of the Spirit in the bond of *Peace*, by several *Vniting Principles*. Among which there are *ten Rules* for a *right understanding* of *Scripture*, very usefull for these diuided times. By Ralph Venning. [Psal. 133. 1. three lines.]

LONDON, Printed by S. G. for J. Rothwell, at the Fountain and Bear in Goldsmiths-row in Cheapside. 1657."

Sm. 8vo. Title, 1 leaf; pp. 52. [J.L.D.]

3. *Mysteries and Revelations*. Or, The Explication and Application of severall Extra-essentiall and borrowed names Allusions, and Metaphors in the Scripture. By Ralph Venning. [Marke 4. 11., 5 lines.]

LONDON, Printed for John Rothwell at the Sun and Fountain in Pauls Churchyard. 1647.

Very small 8vo. Title, 1 leaf; Epistle Dedicatory "To the Reverend my much Honoured Friend, Mr. George Hughes, Preacher of the Word of God in Plymouth," signed "Your own sonne in and according to the faith of the Gospell Ralph Venning," 3 leaves; To the Reader, and Errata, 3 leaves; *Mysteries and Revelations*, pp. 124. This work is in double columns. The *Mystery* being in the first column, and The *Revelation* in the second. There are xxvii sections or chapters. [J.L.D.]

3b. *Mysteries and Revelations*, or the Explication and Application of severall Extra-essentiall and borrowed Names, Allusions and Metaphors in the Scripture. The second Edition. By Ralph Venning. [Marke 4. 11. 5 lines.]

London, Printed for John Rothwell at the Sun and Fountain in Pauls Church-yard. 1649.

Very small 8vo. Title, 1 leaf; To the Reverend my much Honoured Friend Mr. George Hughes, Preacher of the Word of God in Plymouth, 3 pages; To the Reader, 3 pages; *Mysteries and Revelations*, pp. 1-109; An Index to the names which are opened and applied, pp. 110-111. [B.M.]

3c. *Mysteries and Revelations* . . . [as the edition of 1649.] By Ralph Venning. [Marke 4. 11. 4 lines.]

London, Printed for John Rothwell at the Sunne and Fountain in Pauls Church-yard. 1652.

Very small 8vo. Title, 1 leaf; To the Reverend . . . Mr. George Hughes, 1 leaf; To the Reader, 1 leaf; *Mysteries and Revelations*, pp. 1-104; An Index to the names, p. 105. In double columns. xxvii sections. [B.M.]

3d. "Mysteries and Revelations. Or, The Explication and Application of severall Extra-essentials and borrowed Names, Allusions, and Metaphors in the Scripture. By Ralph Venning. [Mark 4. 11. four lines.]

LONDON, Printed for *J. Rothwell*, at the Sun and Fountain in Goldsmiths-row in Cheapside. 1654."

Sm. 8vo. Title, 1 leaf; Dedication "To the Reverend my much Honoured Friend, Mr. George Hughes, Preacher of the Word of God in Plymouth," By Ralph Venning, 1 leaf; To the Reader, 1 leaf; pp. 104; Index, 1 leaf. [J.L.D.]

"Reverend Sir, If *Alexander* were so much engaged to *Aristotle*, as that it became a question, whether he ought not more to him then to his Father *Philip*; and that onely because he learnt him some *natural Philosophy*: how much more am I obliged to you, whose *Ministry* God did principally use to teach me the knowledge of *self* and Christ, *nature* and *grace*. Beside the addition of many other (*not Common*) favors and pledges of your heartlove towards me which still and [error for are] before me as *Memorial-Pillars* ingraven with this Motto, *Acknowledge with thankfulness*, I cannot forbear to mention, how after your long and sore *travel in birth till Christ was formed in me*, your soul revived to see that a *Man-child* (and if I mistake not) your first born in that Country² was delivered from the belly of *Hell* into the *lap* and bosome of Jesus Christ. . . ." (*Ep. Ded.*)

3e. "Mysteries and Revelations. . . (As the edition of 1654.)

LONDON, Printed for *J. Rothwell*, at the Fountain in Goldsmiths-row in Cheapside. 1657."

Sm. 8vo. Title, 1 leaf; Dedication, 1 leaf; To the Reader, 1 leaf; pp. 101. Index, 1 page not numbered; Several Pieces Printed by John Rothwell, 1 leaf. This edition is more correctly printed than that of 1654. [J.L.D.]

4. "A Warning to Back-sliders; or, A Discovery for the Recovery of Fallen Ones. Delivered in a sermon at *Pauls*, before the Right Honourable, the Lord Mayor and Aldermen of the City of London. By Ralph Venning. [Hosea. 2. 7. three lines.]

LONDON, Printed by *T. R. & E. M.* for *John Rothwel*, at the Fountaine and Bear in Goldsmiths Row, in *Cheap-side*. 1654."

Sm. 8vo. Title, 1 leaf; Ep. Ded. to the Right Honourable Tho. Viner, Lord Major, &c., by R. Venning dated "March 1654." 3 leaves; Sermon on Rev. ii. 5, pp. 56. [J.L.D.]

"I hope it will not be imputed to me as a crime, that I did all I could to keep *this Sermon* from the Presse,

² Devonshire.

not fearing that it would do any hurt; *but rather* that it might do little, if any good, in this hard, *very hard-hearted age*. But seeing it hath pleased (I think I may *without offence* say) God and you, to call it to remembrance, some moneths after it was preach't I could not but obey your Order, in giving you that which you called for, viz. *the Sermon*, and not another thing. For indeed having observed some books frontispic'd *with a Sermon Preacht at PAULS*, which (as 'tis said of Sir Francis Drake's ship) had nothing left (not a plank nor rib) but the very name thereof; I durst not (*and I hope none will think it a too nice and a needlesse scruple of conscience, that I say*) I durst not give you that to read which you did not heare. You have the same things and words, with no more variation then, nor *indeed so much as*, the necessary, *very necessary* difference, that is to be put between pen and tongue, required." (*Ep. Ded.*)

4b. A Warning to Blacksliders. . . . London . . . 1654.
[Exactly as the 8vo. edit. of 1654.]

4to. 4 leaves; pp. 30. A-E3 in fours. [Bod.]

4c. "A Warning to Back-sliders. . . .

LONDON, Printed by *A. Maxey*, for *John Rothwel*, at the Fountain and Bear in Goldsmiths Row, in *Cheap-side*. 1657."

Sm. 8vo. Title, 1 leaf; Ep. Ded. 2 leaves; Sermon pp. 47.
[J.I.D.]

5. The Way to true Happinesse or the Way to Heaven open'd. In a Sermon before the Right Honourable, the Lord Mayor and Aldermen of the City of London, Jan. 28. 1654. By Ralph Venning. [Gal. 6. 15, 16. 5 lines.]

London, Printed by T. R. and E. M. for John Rothwel, at the Fountain and Bear in Goldsmiths Row, in Cheap-side. 1655.

4to. Request to print the Sermon, Packe, Mayor, Tuesday Jan. 30. 1654, 1 leaf; Title, 1 leaf; Dedication To the Right Honourable Christopher Packe, Lord Mayor and the Aldermen of the City of London, 4 leaves; The Way to true Happinesse discovered. From the words of our Blessed Saviour, pp. 1-43; Books printed by J. Rothwell, 1 page;—

"Mr Venning hath these peeces extant.

Orthodox Paradoxes 8vo

Mysteries and Revelations 8vo

Second Part of Sentences 8vo

New Command renewed 8vo

Milk and Honey in divine sentences 8vo

The Warning to Backsliders in a sermon 8vo."

This sermon was published 14 March 1654. [B.M.]

5b. "The Way to true Happinesse, Or, the Way to Heaven Open'd. In a Sermon before the Right Honourable the Lord Major and Aldermen of the City of London, Jan. 28. 1654. By Ralph Venning. [Gal. 6. 15, 16. six lines.]

London, Printed by A. Maxey for John Rothwell, at the Fountain and Bear in Goldsmiths Row, in Cheapside. 1657."

Sm. 8vo. Title, 1 leaf; Ep. Ded. to the Right Honourable Christopher Pack, Lord Major, &c dated "11th Moneth, or Febr. 20. 1654," 4 leaves; Sermon on Matt. vij. 21. pp. 64. [J.L.D.]

"That I print this Sermon, and that I print it more largely then I preach't it, is in obedience to your Order, which (*having resolved a former scruple of mine*) will warrant me for so doing, without making any further Apology; though I hope that the Readers advantage also will be the more . . ." (*Ep. Ded.*)

6. Milke and Honey, or a Miscellaneous Collation of many Christian Experiences, Sayings, Sentences, and several places of Scripture improved. With a second part of Orthodox Paradoxes. By Ralph Venning. [Psal. 119. 103, and Psal. 19. 10, 3 lines.]

London, Printed by T. R. & E. M. for John Rothwel, at the Fountaine and Beare in Goldsmiths Row in Cheap-side. 1653.

Sm. 8vo. A view of a fountain and a bear proceeding to drink, in a square border, with an inscription running along the four sides, "To be sold at the Fountaine and Beare in Cheap-side in Goldsmiths-Row." In the square are also the initials I.R., 1 leaf; Title, 1 leaf; A commendatory notice, signed Joseph Caryl, April 11th 1653, 1 leaf; "To my deare and honoured Father and Mother Francis and Joan Venning," signed "your dutiful Sonne, Ralph Venning, July 1653," 2 leaves; The Epistle to the Reader, 3 leaves; Milke and Honey, pp. 1-127; (828 ¶'s). Then comes a distinct title page as follows,

"Orthodox Paradoxes; or, A Believer Clearing Trvth by seeming Contradictions. The second part. By Ralph Venning. [2 Cor. 4. 3. 2 lines.] London, Printed by T. R. & E. M. for John Rothwel, at the Fountaine and Beare in Goldsmiths Row in Cheap-side. 1653."

Title, 1 leaf; To the Reverend my most and best deserving friend Mr. George Hughes, Preacher of the Word of God in Plimouth, 2 leaves; The Epistle to the Reader, 5 leaves; Orthodox Paradoxes, pp. 1-71; "Reader, Though Paradoxes increase . . ." on p. 71; (309 ¶'s). Dives and Lazarus, or Not Now, but Hereafter, pp. 73-79. The signatures run throughout this volume from A to P. [B.M.]

6b. "Milke and Honey: Or a Miscellanious Collation of many Christian Experiences, Sayings, Sentences, and several places of Scripture improved. With a second part of Orthodox Paradoxes. The second Edition. By Ralph Venning. [Psal. 149. (error for 119.) 103. and Psal. 19. 10. four lines.]

LONDON, Printed by *T. C.* for *J. Rothwel*, at the Fountain and Beare in *Goldsmiths-row* in *Cheapside*. 1654."

Sm. 8vo. Title, with Joseph Caryl's imprimatur dated "April 11. 1653," at the back, 1 leaf; Dedication "To my deare and honoured Father and Mother, *Francis* and *Joan Venning*," signed Ralph Venning, July. 1653, 1 leaf; To the Reader, 2 leaves; pp. 117. (828 ¶'s). Then this Title, "Orthodox Paradoxes; Or, A Believer clearing truth by seeming contradictions. The Second Part. By Ralph Venning. [2 Cor. 4. 3. two lines.] LONDON, Printed by *T. C.* for *J. Rothwel* (as above) 1654." 1 leaf; Dedication "To the Reverend, my most and best deserving friend, and ever to be honoured as a Father, Mr. George Hughes, Preacher of the Word of God in Plymouth," 2 leaves; The Epistle to the Reader, dated July 1653, 3 leaves; pp. 58; on the 58th p. this note, "Reader, Though *Paradoxes* increase, yet here's a want of *Orthodox Paradoxes* to fill up the sheet; and therefore this supplement is made, which I hope will make to thy advantage." Then follows "Dives and Lazarus, Or Not Now, but Hereafter," which fills pp. 59 to 65. Errata, 1 page not numbered. Though the two parts of the book have each a separate pagination, the signatures are consecutive. [J.I.D.]

6c. "Milke and Honey: Or a Miscellanious Collation of many Christian Experiences, Sayings, Sentences, and several places of Scripture improved. With a second part of Orthodox Paradoxes. The third Edition. By Ralph Venning. [Psal. 149 (for 119.) 103. and Psal. 19. 10. four lines.]

LONDON, Printed by *A. Maxey* for *J. Rothwel*, at the Fountain and Bear in *Goldsmiths-row* in *Cheapside*, 1656."

Sm. 8vo. Title and prefixes, as in 2nd edit. 4 leaves; Milk and Honey, pp. 95. There are 828 ¶'s. [J.I.D.]

Though I have two copies of this 3rd edition, neither has the second part of Orthodox Paradoxes, as on the Title.

7. Canaans Flowings. Or a second part of Milk & Honey; being Another Collation of many Christian experiences, sayings, &c. With an Appendix called The Heathen Improved; or The Gibeonites hewing of wood and drawing of water for the Sanctuary. By Ralph Venning. Despise not small things; you may make much of a little.

London, Printed for John Rothwel, and are to be sold by Elisha Wallis, next to the three Kings in Pauls Church-yard, near Austins gate. [n.d. 1654].

Sm. 8vo. Title, 1 leaf; To the Reader, signed Ralph Venning, August 1654, 3 leaves; Canaans Flowings, or More Milk and Honey, pp. 1-174; (many of these pages are misnumbered 200 instead of 100, thus 271, 274, for 171, 174. There are 382 ¶'s.) The Heathen Improved, pp. 275 (should be 175)-229. (The misnumbering still continues. There are 125 ¶'s.) Errata on p. 229. Books printed by John Rothwel, 2 pages. [B.M.]

7b. "Canaans Flowings. Or, a second Part of Milk and Honey. Being Another Collation of many Christian Experiences, Sayings, &c. With an Appendix, called, *The Heathen Improved*. Or, *The Gibeonites* hewing of Wood, and drawing of Water for the Sanctuary. By Ralph Venning. *Despise not small things; you may make much of a little.*

London, Printed by T. C. for J. Rothwel, at the Fountain and Bear in Goldsmiths Row, in Cheapside. 1656."

Sm. 8vo. Title, 1 leaf; To the Reader, by Ralph Venning, dated August 1654, 2 leaves; "Canaans Flowings; or, More Milk and Honey," pp. 235 [an error for 127]; (446 ¶'s) "The Heathen Improved," p. 236 to 268. (125 ¶'s.) [J.I.D.]

7c. "Canaans Flowings. Or Milk and Honey. Being a collation of many Christian *Experiences, Sayings, Sentences*, &c. which were formerly miscellaniously but are now Alphabetically printed for the benefit of the Readers. By Ralph Venning. [Psal. 119. 103 and Psal. 19. 10, four lines.]

LONDON, Printed by T. C. for John Rothwel, at the Fountain in Goldsmiths Row, in Cheap-side. 1658."

Sm. 8vo. Title, 1 leaf; "The Book-seller to the Readers," signed "J. R." and Errata, 2 leaves; pp. 303. Except in the *Heathen Improved* the ¶'s are not numbered; but are arranged under heads, alphabetically. [J.I.D.]

"Courteous Readers, That you may not [think it] strange to see any of Mr. Venning's Books come forth in this fashion, without a Prefatory Epistle from himself, Be pleased to Know that in the year 1655, there was Printed in the name of one Mr. Port, a little piece called *Spiritual flowers*, being a collection of several sayings and sentences Alphabetically dispos'd, which were all taken (scarce 20 excepted) out of Mr. Venning's books Printed by me, especially out of that intituled *Milk and Honey*, as by comparing both will easily and evidently appear; which I acquaint you with that you may not

lay out money in that, which is but a part of this ; especially seeing this is now also Alphabetically printed for the better finding out any sentences, that you may have a mind to peruse by themselves as belonging to one subject. . . . I shall say no more but that *these little hints may prove great helps*, and that they may be so, I commend them to your perusal, and you and them to the blessing of God. J. R."

8. Mercies Memorial : or Israel's thankful Remembrance of God in their high estate, for his mercifull remembring [*sic*] of them in their low estate. In a Sermon before the Right Honourable the Lord Mayor, the Right Worshipful the Aldermen and the Companies of the City of London, on the 5th of November, 1656. By Ralph Venning. [Psal. 107. 8, 3 lines.]

London, Printed for *John Rothwell*, at the Fountain in Goldsmiths-row in Cheapside. 1657.

4to. A request to print Sermon, Tichborn, Mayor 11th of November 1656, 1 leaf ; Title, 1 leaf ; Dedication to Sir Robert Tichborn, signed Ralph Venning, Decemb. 1656, 2 leaves ; Mercies Memorial, pp. 1-32. This sermon was brought out on 30 December, 1656, but dated forward, 1657. [B.M.]

8b. "Mercies Memoriall. Or, Israels Thankfull Remembrance of God in their high estate, for his mercifull remembering of them in their low estate. In a Sermon before the Right Honourable the Lord Mayor, the Right Worshipful the Aldermen, and the Companies of the City of London, on the 5th of November, 1656. By Ralph Venning. Whereunto is added, A discovery of the Hellish Powder-treason in the year 1605. by the bloody Papists. Usefull for all Families, that they and their children may be stir'd up to thankfulness for so great a deliverance. [Psal. 107. 8, three lines.]

LONDON, Printed for *J. Rothwell*, at the Fountain in *Goldsmiths-row* in *Cheapside*. 1657."

Sm. 8vo. Title, 1 leaf ; Ep. Ded. to . . . Sir Robert Tichborn Lord Mayor, &c. dated "Decemb. 1656," and Order to print, dated 11th Nov. 1656, 3 leaves ; Sermon on Psal. cxxxvi. 23, pp. 61. [J.I.D.]

Though I have two copies of this sermon, I do not find any addition as described on the Title page.

9. "Mr Venning's Farewel Sermon [at St. Olave's Southwark.] Heb. x. verse 23. 'Let us hold fast the Profession of our Faith without wavering ; (for he is faithful that promised.)'"

4to. In "*A Compleat Collection of Farewel Sermons*. London, Printed in the Year, 1663." The Sermon fills pp. 237

to 237 [a misprint for 247.] The only reference I find to the special circumstances of the time is this :—

“I shall now proceed to touch the remaining Arguments that are yet behind, and give you a few helps, with which I shall conclude this discourse at this time ; I pray God I may not say *Preaching* too.” (p. 237.) [J.L.D.]

10. Things worth thinking on ; or Helps to Piety. Being *Remains* of some Meditations, Experiences, and Sentences, &c., *never published till now* ; and now are as an addition to them which were formerly made publick. Together with a Sermon Entituled The Beauty of Holines. By Ralph Venning, M.A. Heretofore Lecturer in Southwark. [Prov. 25. 11. four lines.]

LONDON, Printed for *Robert Duncombe*, at the Golden *Falcon* in *Cateaton* Street, over against St. *Lawrence* Church ; and for *John Hancock*, at the end of *Popes-head Alley* next *Cornhil*. 1665.

Sm. 8vo. Title, 1 leaf ; The Epistle to the Reader, signed “R.V.” 3 leaves ; “Things worth thinking on,” &c. [412 in number] pp. 153. Then this title “The Beauty of Holines,” represented in a Sermon long since preach’d, but now enlarged and published, *To endear Holiness*, that it may be below’d and practised as it deserves to be by all that profess it. By Ralph Venning. [Zach. 14. 20, 21, nine lines], 1 leaf ; Sermon on Ps. 93. 5. pp. 74 ; Books sold by John Hancock, 2 leaves. Though the pagination begins afresh with the sermon, the signatures are consecutive. [J.L.D.]

11. “Sin, the Plague of Plagues ; or, Sinful Sin the worst of Evils. A Treatise of Sins Tryal and Arraignment, wherein Sin is Accused for being, proved to be, and condemned for being exceeding sinful : And that,

1. *As against God* ; his Nature, Attributes, Works, Will, Law, Image, People, Glory and Existence.
2. *As against Man* ; his good and welfare of Body and Soul, in this Life, and that to come : With the Use and *Improvement* to be made of this Doctrine, that men may not be Damned, but Saved, &c.

Being the Substance of many Sermons Preached many Years ago in Southwark. By *Ralph Venning*, A.M. [Prov. 8. 36. and John 5. 14. 4 lines.]

London, Printed for *John Hancock*, to be sold at his Shop in *Bishopsgate-street*, over against the *Exchange*, next to the *White-Lyon*, and the corner shop in *Popes-head Alley* ; and by *T. Parkhurst* at the *Golden Bible* on *London-bridge*, 1669.”

8vo. Title, 1 leaf ; “To all that were Hearers and to all that shall be Readers of what’s contained in the following

Treatise," signed "Ralph Venning, 6 leaves; Errata, 1 leaf; Sin the Plague of Plagues, &c. pp. 352. [J.I.D.]

"This Treatise was began, and almost finished, before the late Sore and great Plague began; and therefore (*though for a memorial of it*) I have taken occasion to give it a Name or Title from thence, yet it is not calculated particularly thereunto; but with a more general aspect upon the universal mischief, that *Sin* hath done mankind..." (Sig. A 3.)

12. The Dead yet Speaking, or Mr. Venning's Living Sayings.

London, Printed by A. P. in the year 1674.

Folio, single sheet. 100 Sentences or Sayings in 3 parallel columns.

The 1st saying is "Tis not enough to be Orthodox, if we be not honest, or hold to the Truth, if we hold it in unrighteousness."

The 100th saying is "Though believers are not (all of them) delivered from the earth of the grave, yet they are from the Hell of the grave." [B.M.]

13. Mr. Ralph Venning's Alarm to Unconverted Sinners, And strong consolation to true Believers, or Sin worse than Affliction, Death, Hell, or the Devil. In several Parallels following...

London, Printed for William Miller at the Gilded Acorn in St. Paul's Church-yard, near the little North Door. 1675. At which place you may be furnished with most sorts of bound or stitched Books, as Acts of Parliament, Proclamations, Speeches, Declarations, Letters, Orders, Commissions, Articles; As also Books of Divinity, Church Government, Sermons, and most sorts of Historie, Poetry, Plays, and such like, &c.

Folio, single sheet. Two parallel columns.

Commences—"Sin is worse than affliction and Suffering."

Ends—"That all sin should undergo all misery, is not unjust." [B.M.]

14. "Saints Memorials: or, Words fitly spoken, Like Apples of Gold in Pictures of Silver. Being, A Collection of Divine Sentences Written and Delivered by those late Reverend and Eminent Ministers of the Gospel, Mr. Edmund Calamy, Mr. Joseph Caryl, Mr. Ralph Venning, Mr. James Janeway. [Heb. 11. 4. and Rev. 14. 13. 5 lines.]

LONDON: Printed in the year 1674."

8vo. Frontispiece containing portraits of the four men. Title, 1 leaf; To the Reader, four leaves; pp. 262 [misprinted

248]. Mr. Venning's part of the vol. occupies p. 113 to 218, and begins thus,—

"A Spiritual Garden of Sweet-smelling Flowers, or, Mr. Ralph Venning's Divine Sentences." [J.I.D.]

15. "Venning's Remains, or, Christ's School: consisting of Four Classes of Christians, I. Babes, II. Little Children, III. Young Men, IV. Fathers. With their several characteristical differences and attainments; also the Doctrines proper to be taught to each of them. Being the Substance of many Sermons Preached by Ralph Venning, and fitted by him for the Press before his Death. [Quotations, 1 Cor. 3. 1. and 1 Joh. 2, 13, 6 lines.]

London, Printed for *John Hancock*, Senior and Junior, at the Sign of the three Bibles in Popes-head Alley, over against the Royal Exchange in *Cornhill*. 1675."

8vo. Portrait by Hollar. Title, 1 leaf; To the Reader signed "Ralph Venning," 2 leaves; "This following Advertisement was intended as an Epistle to the Reader before the Author's own was found," signed "James Barron, John Collins," 1 leaf; "Christ's School," pp. 384. [J.I.D.]

"This Treatise as it is now published was so left by the worthy Author when he went to his rest."

16. [The Dead instructing the Living, or Sick-bed Studies. Lond. 1675. 8vo. portrait by Hollar. Bliss pt. i. 9s. Lowndes *Bibliog. Manual* sub Venning (Ralph).]

A Cry for Labourers in Gods Harvest: Being a Sermon Preached upon The sad Occasion of the late funeral of that Eminent Servant of Christ Mr. Ralph Venning, who departed this life March 10. 167 $\frac{1}{2}$, By Robert Bragge, an unfeigned Lover of, and Mourner for, the deceased.

LONDON, Printed and are to be sold by *John Hancock* Senior and Junior, at the sign of the three Bibles in Popes-head Alley in *Cornhill*. 1674.

4to. Title, 1 leaf; To the Readers, 4 leaves; The Sermon, on Matt. ix. 38, pp. 1–32; Books printed and sold by John Hancock, 1 leaf. [B.M.]

"Nine Treatises by R. Venning:

A Warning to backsliders;

The Way to happiness;

Mercies Memorial;

Canaans flowings or Milk and Honey;

His 543 Orthodox and Miscellaneous Parradoxes;

The New Command Renewed, or Love one another;

Mysteries and Revelations;

Things worth thinking on or helps to piety;

Sin the plague of plagues, or sinful sin the worst of Evils."

Sorrow upon Sorrow: Or, The much Lamented Death of the worthy Mr. Ralph Venning, being a Sermon preached Upon the Sad Occasion of his Death before his Burial, From Acts 20, 38, Sorrowing most of all that they should see his Face no more. By W. Beerman Minister of the Gospel. And Devout Men carried Steeven to his Burial, And made great Lamentation over him.

LONDON: Printed for *Francis Smith*, at the Elephant and Castle near the *Royal Exchange* in *Cornhil*, 1674.

4to. Title, 1 leaf; Preface signed "D.L." and "R.T." 1 leaf; Sermon, pp. 19. [Dr. W.'s Lib.]

"While Preaching at *Joyners Hall* on the Lords day in the Afternoon, *March 1.* 1673, he was taken ill, and after that, never more able to Preach, but Departed this life . . ." (*Preface.*)

An Elegy on the Death of that much Lamented And no less wanted, Industrious Labourer in Gods Vineyard, the Reverend Mr. Ralph Venning, who quitted this Vale of Tears, and put on Immortality the 10th day of this Instant March, 1674.

London, Printed in the year 1674.

Folio, single sheet. Two parallel columns, containing 100 lines.

Commences—"Hark! how our Sion with Heart-piercing Groans,
Her Chariots and her Horsemen's Loss bemoans;

Ends—"If you 'l be grateful Debtors, pay him now
Some of those Tears, which he laid out for you."

A very scarce single sheet. A copy in *Luttrell Collection of Broad-sides*, vol. i. No. 155, in *Brit. Museum*. This Elegy will also be found in *Saints Memorials* . . . 1674, pp. 214-218.

Venning was one of the compilers of

An English Greek Lexicon, containing the Derivations and various Significations of all the Words in the New Testament, &c. London, 1661. 8vo.

The others who assisted with him in this work were Joseph Caryl, Thomas Cockayne, William Dell, Matthew Barker, William Adderley, Mathew Mead, and Henry Jessey.

William Strong's posthumous treatise on "*Communion with God in Ordinances, the Saints Priviledge and Duty*," London, 1656, 12mo, has prefixed three addresses "To the Reader," by three Devonians, viz John Rowe, 4 leaves, Thomas Manton, 5 leaves, and Ralph Venning, 3 leaves. [J.I.D.]

Jonathan Hanmer's *Exercitation upon Confirmation*, 8vo. 1657 and 1658, has an address "To the Berean Readers" by Ralph Venning, 2 leaves. [J.I.D.]

Theophilus Polwhele's *Treatise of Self-Deniall*, 4to. 1658 and 8vo. 1659 has an address to the Christian Reader, signed Ralph Venning, 7 leaves. [J.L.D.]

John Goodwin's posthumous book on "*A Being Filled with the Spirit*." London, 1670, 4to. has an Epistle Dedicatory "To all that desire to be filled with the Holy Spirit" by Ralph Venning. [J.L.D.]

FULLWOOD (FRANCIS), D.D.

Place of birth not known. Educated at the Charter-house; he writes of himself as "formerly a plant in that excellent nursery." Of Emmanuel Coll. Cambridge. B.A. in 1647. In 1651 he styles himself "Minister of the Gospel at Staple Fitz-pane in the county of Somerset;" and in 1656 as "Minister of West Alvington, in the county of Devon." As such also his name appears in the Minutes of the Exeter Assembly, October 18th, 1655. Installed Archdeacon of Totnes, 31 Aug. 1660, and in that year on 22 Oct. a Royal Mandate was given for him to be created D.D. at Cambridge. Vicar of Ashburton, 1660 to 1680. Prebendary of Exeter, 15 Oct. 1662, vice Geo. Kendall, deprived. It is supposed that about the time of his resignation of the vicarage of Ashburton, he became rector of Litton Cheney, near Dorchester, where he died 27 Aug. 1693. In the burial register of that parish is this entry, "Francis Fullwood DD & Rector of Litton, buried 1 Sept. 1693."

Cf. Le Neve's *Fasti*, by Hardy, i. 404, 424; Preface by Hardwick to *Roma Ruit*, 1847; Kennett's *Register*, 188, 242, 287, 481, 546, 812; Ant. & Wood's *Athenæ Oxonienses*, by Bliss, iii. 591, iv. 814; Worthy's *Ashburton*, 23; Information from Dr. Colby, rector of *Litton Cheney*; *Trans. Devon. Association*, ix. 282.

1. *Vindiciæ mediorum & mediatoris*. Or, the present Reigning Errorr Arraigned, at the Barr of Scripture and Reason. Wherein is discovered the Falshood and Danger of that late borne Opinion, that pretends to an immediate enjoyment and Call of the Spirit of God, both above and against its owne Effects, Cause, Word, Ministry, and Witness, in all respects. Occasioned by a pamphlet, intituled, The Saints travell to the Land of Canaan, or a Discovery of Seventeen false Rests, &c. By one R. Wilkinson, a Preacher of this Errorr about Totnes in the West. In the treatise following, the Reader shall finde, most of the maine Fundamentall Doctrinall Truths that this Age doth controvert, faithfully vindicated, cleared, confirmed. By F. Fullwood, Minister of the Gospell at Staple Fitzpane in the County of Somerset. Jer. 6. 16. . . .

London, Printed by *Tho: Roycroft*, and are to be sold by *Jo: Ridley* at the Castle in Fleet-street, by Ram Alley, 1651.

8vo. 12 leaves; pp. 312, or, A in eight, B in four, C-X in eights, Y in four. [Bod.]

2. "The Churches and Ministry of England, True Churches and true Ministry. Cleared, and proved, in a Sermon preach'd the 4th of May at *Wiviliscombe*; before a numerous Congregation assembled together to hear the opposition, which had been long threatned to be made that day, by Mr *Collier* and others of his party, who, with the greatest strength the West would afford them, were present at the Sermon. Wherein were these Five things undeniably proved.

1. That a mixture of prophane and scandalous persons with reall Saints, is not inconsistent with the Church of God, or a true Church.
2. That then the Churches that are now in *England*, are Churches of God, and true Churches.
3. That then, the Ministry of those Churches, is the Ministry of God, and the true Ministry.
4. That then, there is a great and heavy sin lying at the door of all such, as do presume to preach publicly among us, without a Call, who have true Churches, and a settled Ministry.
5. And then, they also must needs be guilty, who forsake true Churches and a lawfull Ministry to follow and hear unsent preachers.

By Francis Fullwood Minister of the Gospel at *Staple Fitzpane* in the County of *Somerset*.

Before it there is an Epistle and Preface, shewing the Manner, and a Narrative [subjoined] shewing the Substance of the Dispute after the Sermon, (both which lasted nine hours,) Set forth by the Ministers that were at the Dispute, and Attested under their Hands.

LONDON, Printed by *A. M.* for *George Treagle* at *Taunton*, and are to be sold at *London*, by *William Roybould* at the Unicorn in *Pauls Church-yard*. 1652."

- 4to. Title, 1 leaf; "To his Honoured Friend Collonel John Pine, a Member of Parliament, and one of the Commissioners for the Militia of the County of Somerset," signed "Fran: Fullwood," 3 leaves; "A Preface to the Reader," signed "Charls Darby, 9 leaves; Sermon on 1 Cor. i. 2. pp. 56; "A Brief Narration of the heads of that long (yet happy) Discourse, betwixt M. *Fullwood* (assisted sometimes with M. *Wood*, M. *Howe*, &c.) and M. *Collier* with the strength of his party in the *West*,

upon *May 4. 1652. at Wiviliscombe, commonly known by the name of Wilscome in Somerset-shire,*" pp. 57 to 73. At the end

"This we publish as a true, though short, sum of that large Dispute.	}	Mr. How. Mr. Wood. Mr. Bindon. Mr. Wakely. Mr. Ball. Mr. Darby.	}	Ministers & Witnesses."
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At the back of p. 73 a list of new Books Printed and sold by *W. Roybould*.

The Master How here spoken of is John Howe of Great Torrington. This is the earliest public mention of him. Unknown to his biographers hitherto. [J.I.D.]

In 1650 "*Henry Jeanes Minister of Gods Word at Chedzoy in Sommerset-Shire,*" published *The want of Church-Government no warrant for a totall omission of the Lord's Supper.* It would appear that Francis Fullwood answered this book in

3. [A Briefe examination of Mr Jeanes his Arguments.]

I have failed to trace a copy of this answer, and owe my knowledge of its existence to the second edition of Jeanes book, sm. 8vo, Oxford, 1653. On the title page of this edition appears, "Whereunto is now added, A Reply unto M^r Fullwood his pretended Examination of the aforesaid Discourse." In alternate paragraphs, headed "*M. FULLWOOD*" and "*REPLY*," we have the text of the Examination, and the Answer of Jeanes; the two occupying from p. 131 to p. 336 of the volume. [J.I.D.]

4. A True Relation of a Dispute, between Francis Fullwood, Minister of West-Alrington in the County of Devon and one Thomas Salt-House, as 'tis said, of the County of Westmerland: [*sic*] before the Congregation of them, called, Quakers; with some others that accidentally heard thereof: In the House of Henry Pollexfen, Esq; in the said parish of West-Alrington. On Tuesday the 24th day of October 1656. Published by some that were present at the Dispute; out of a single and sincere desire, that Error may be shamed and the Truth cleared. Together with an Answer to James Godfries Queries. By the said F. F. I will provoke you to jealousy by them that are no people, and by a foolish Nation will I anger you. Rom. 10. 19.

London, Printed by A. M. for Abel Roper at the Sign of the Sun in Fleet-street over against St. Dunstons Church. 1656.

4to. Title and the Preface to the Reader, 3 leaves; A True Relation, pp. 1-19; p. 20 blank; then "A Brief and

Plain Answer to James Godfries Queries, entitled; Some Queries to be answered by thee George Pitt, who professeth thy self to be a Minister of Christ, but art found in the steps of the Pharisees, and hast not the Spirit of Christ, therefore the spirit of error. With some Counter-Queries to be answered by James Godfrey; thence arising. By F. F." pp. 1-12; signed on p. 12 F. F. Or A to D in fours, E three leaves. [B.M.]

Thomas Salthouse was of Drugglibeck in Lancashire. He died at St. Austell in Cornwall 29 Nov. 1690, aged about 60 years. (Smith's *Cat. of Friends Books*, ii. 529.)

5. A discourse of the Visible Church. In a large Debate of this famous Question, viz. Whether the visible Church may be considered to be truly a Church of Christ without respect to saving grace? Affirm. Whereunto is added a brief discussion of these three Questions, viz.

1. What doth constitute visible Church-membership.
2. What doth distinguish it, or render it visible.
3. What doth destroy it, or render it Null?

Together with a large application of the whole, by way of Inference to our Churches, Sacraments, and Censures. Also an Appendix touching Confirmation, occasioned by the Reverend Mr. Hanmore [Jonathan Hanmer] his pious and learned Exercitation of Confirmation. By Francis Fulwood Minister of the Gospel at West-Alvington in Devon. . . .

London. Printed by *Tho. Ratcliffe*, for *Abel Roper* at the Sun in Fleet-street, over against St. Dunstons Church. 1658.

4to. 16 leaves; pp. 296; two leaves of advertisements. The Ep. to the Reader is dated, 'Jan. 5. 1657.' [Bod.]

6. Some Necessary & Seasonable Cases of conscience About Things Indifferent in Matters of Religion, Briefly, yet faithfully stated and resolved: wherein the just bounds of Imposing on one hand, and of Obeying on the other, are truly Fixed, By an Indifferent Hand. . . .

London, Printed, and are to be sold at the Sign of the George in Fleet-street, and the first Shop in Westminster-Hall. 1661.

12mo. 12 leaves; pp. 198; four leaves; or A-I in twelves, K in six. [Bod.]

7. The General Assembly: Or, The *Necessity* of Receiving the *Communion* in our *Publick* Congregations, evinced from the Nature of the *Church*, the *Word* of God, and *Presbyterian* Principles. In a Sermon lately Preached in the Cathedral

Church of Exeter. By Francis Fullwood, D.D. [Quotations 7 lines.]

London, Printed by *E. Cotes* for *James Collins*, and are to be sold by *Abisha Brocas* Bookseller in *Exon*. 1667."

4to. Title and "Epistle to my Worthy Brethren, the Ministers, that yet Consent not in point of *Conformity*," 2 leaves; Sermon on Heb. xii. 23, pp. 30. [J.L.D.]

8. Toleration not to be Abused. Or, a serious question Soberly Debated, and Resolved upon Presbyterian Principles. Viz. Whether it be advisable, especially for the Presbyterians, either in Conscience or Prudence, to take advantage from his Majesties late Declaration, to Deny or Rebate their Communion with our Parochial Congregations, and to gather themselves into distinct [*sic*] and separate Churches? By One that loves Truth and Peace. . . .

London, Printed by *S. and B. Griffin*, for *James Collins*, and are to be sold at the Kings Arms in Ludgate Street, 1672.

4to. One leaf; pp. 35; or, A-D in fours, E in two. [Bod.]

9. "Humble Advice to the Conforming and Non-Conforming Ministers and People, how to behave themselves under the present Liberty. By the author of Toleration not to be abus'd.

LONDON: Printed for *James Collins* at the Kings Arms in *Ludgate-street*, 1673."

Sm. 8vo. Title, 1 leaf; "Advice to the Conformists and Non-Conformists," pp. 1-69; "Remarques upon the late Reflections on Toleration not to be abused," pp. 70-86; then this Title "A Dialogue betwixt the Independent and Presbyterian about gathering Churches; Taken out of a Book called, the *Grand Debate*, and *Papers* therein Printed, as they were given in to the *Committy* of Lords and Commons, and Assembly of Divines, with the Commissioners of *Scotland* for Accommodation 1644. Printed in 1648. LONDON . . . [as above] . . . 1673." 1 leaf; To the Reader, three unnumbered pages; A Dialogue, &c., pp. 92-126, in the copy examined, which appears to want a sheet at the end, and belongs to Mr. Edward Windeatt, of Totnes.

10. Roma Ruit. The Pillars of Rome Broken: Wherein all the several *Pleas* for the *Pope's* Authority in *England*, with all the *Material* Defences of them, as they have been urged by *Romanists* from the beginning of our *Reformation* to this day, are *Revised* and *Answered*. To which is *Subjoyned* A Seasonable *Alarm* to all Sorts of *Englishmen*, against

Popery; both from their *Oaths* and their *Interests*. By *Fr. Fullwood* D.D. Arch-Deacon of *Totnes* in *Devon*.

LONDON, Printed for *Richard Royston*, Bookseller, to His Most Sacred Majesty, MDCLXXIX."

8vo. Title, 1 leaf; Latin Dedication to Abp. Sancroft, 1 leaf; Dedication to George Lord Bishop of Winton, 4 leaves; "A Preface to the Reader," and Imprimatur, dated Jan. 24. 1678, 5 leaves; The Contents, 4 leaves; pp. 288. The Oaths of Allegiance and Supremacy, 2 leaves; Catalogue of some Books sold by R. Royston, 2 leaves.

Between the Contents and p. 1. are two portraits facing each other, one of Charles I. by R. White, holding a crown of thorns and treading on a globe, the other of Charles II., half length in an oval of laurel leaves. Also between pp. 246 and 247 are two plates, "St Peter" full length, and "St. Peter's Martyrdom," the last "W. Hollar fecit." [J.L.D.]

10b. *Roma Ruit*. . . A New Edition Revised by Charles Hardwick, M.A., Fellow of St. Catharine's Hall, Cambridge.

Cambridge: J. and J. J. Deighton. John W. Parker, West Strand, London. M.DCCC.XLVII."

8vo. pp. xxxi. 334.

This edition is well printed at the University Press, and carefully edited. "The references throughout have been verified, and authorities supplied within [], where Fullwood had given none, or the name only of some writer in a side-note." (p. ix.) Mr. Hardwick's preface contains all the particulars he was able to find concerning the Author and his writings. An Index is also added. [J.L.D.]

11. *Leges Angliæ*. The Lawfulness of Ecclesiastical Jurisdiction in the Church of England, Asserted and Vindicated in Answer to Mr. Hickeringill's Late Pamphlet *Stiled Naked Truth*, the 2^d Part. Gen. ii. ult. *Naked* — but not ashamed. By Fran. Fullwood, D.D. Archdeacon of Totnes in Devon.

LONDON, Printed for *R. Royston*, Bookseller to the King's most Excellent Majesty, at the Sign of the *Angel* in *Amen-Corner*, 1681."

8vo. Frontispiece, Title, 1 leaf; To the Reader, 1 leaf; "The Proeme," 7 leaves; The Contents, 1 leaf; The Bookseller to the Reader, 1 leaf; pp. 78. Catalogue of some Books lately Printed for Richard Royston, 1 leaf.

The emblematic frontispiece is a reduced copy of the frontispiece engraved by A. Hertochs, prefixed to Dr. Gauden's *Ecclesiæ Anglicanæ Suspiria*, 1659, folio. [J.L.D.]

12. The Establish'd Church: or, a Subversion of all the Romanists' Pleas for the Popes Supremacy in England. Together with a Vindication of the present Government of the Church of England, as allow'd by the Laws of the Land, against all Fanatical exceptions; particularly of Mr. Hickerin-gill, in his Scandalous Pamphlet, stiled Naked Truth, the 2d. Part. In Two Books. By Fran. Fullwood, D.D. Archdeacon of Totnes in Devon.

London, Printed by R. Royston, Bookseller to the King's most Sacred Majesty, at the *Angel* in *Amen-Corner*, MDCLXXXI.

8vo. Two engravings; Title, 1 leaf; Latin Dedication to Abp. Sancroft, 1 leaf; Dedication to George Lord Bishop of Winton, 4 leaves; "A Preface to the Reader," and Imprimatur, dated Jan. 24. 1678, 5 leaves; The Contents, 4 leaves; pp. 288. The Oaths of Allegiance and Supremacy, 2 leaves; Catalogue of some Books sold by R. Royston, 2 leaves; Frontispiece and Title to the "*Leges Angliæ* . . . 1681," 2 leaves; To the Reader, 1 leaf; The Proeme, 7 leaves; The Contents, 1 leaf; The Book-seller to the Reader, 1 leaf; pp. 78; Catalogue of some Books lately Printed for Richard Royston, 1 leaf. [Dean and Chapter Lib. Exeter.]

Hardwick, p. viii. says, "The '*Leges Angliæ*' and the '*Roma Ruit*' were bound up together, and published in 1681, with the title '*The Established Church*.' There was however at this time no new edition of the '*Roma Ruit*.' This statement rests on internal evidence of paging, typographical errors, &c."

13. The Case of the Times discuss'd: Being a Serious Exercitation of two cases groundd upon Romans 13. vers. 1, 2, 3, 4, 5. First, How far we are bound to Obey, when we are not Satisfied that the Laws are for our Good? 2d, Whether Subjection implies more than not to Resist the Powers? To which is added, Some Remarkes upon a late Book, Entitled, The Protestant Reconciler. By Fr. Fullwood, D.D. in Exon.

London, Printed for Jonathan Wilkins, at the Starr in Cheapside, next Mercers Chappel, 1683.

8vo. 15 leaves; pp. 124; or, A in eight, a and b in fours, B-I in eights, K in four; two leaves of advertisements. [Bod.]

14. "The Socinian Controversie touching The Son of God, Reduced. In a brief Essay, To prove the Son one in Essence with the Father, upon Socinian Principles, Concessions, and Reason. Concluded With an Humble and Serious Caution to the Friends of the Church of England, against the Ap-

proaches of Socinianism. By F. F. D.D. [Quotations and Imprimatur, dated December the 9th. 1692, ten lines.]

London: Printed for A. and J. Churchill, at the *Black Swan* in *Pater-Noster-Row*, near *Amen-Corner*, 1693."

4to. Title, 1 leaf; Dedication to Gilbert Lord Bishop of Sarum, signed "Fr. Fullwood. Litton near Dorchester, Octob. 14. 1692." 1 leaf; To the Reader, 1 leaf; pp. 30. [J.L.D.]

15. "A Parallel: Wherein it appears, that the Socinian agrees with the Papist, if not exceeds him in Idolatry, Antiscripturism, and Fanaticism. By Francis Fullwood, D.D. and Arch-deacon of Totness in Devon. [Quotations and Imprimatur dated May 16, 1693, six lines.]

London, Printed for A. and J. Churchill, at the *Black Swan* in *Pater-Noster-Row*. 1693."

4to. Title, 1 leaf; Dedication by Francis Fullwood to "John Lord Arch-Bishop of Canterbury," dated "Litton near Dorchester, April 25. 1693," 1 leaf; "To the Reader" and "The Introduction," 2 leaves; pp. 28. [J.L.D.]

GROSSE (ALEXANDER), B.D.

Puritan Divine. Born in Devon. Educated in Caius Coll. Camb.: About 1624 was "Pastor of Plympton S. Mary," Dev. where he continued more than 14 years. The *Old Black Book* of Plymouth Corporation has this entry, "12 Sept. 1632 Memorandum of the election, at a general meeting of the Common Council of the borough, of Alexander Grosse, minister and preacher of God's Word, to be the next incumbent of the vicarage of Plymouth." That he ever held the living I have no proof. In Jan. 1632 Alex. Grosse M.A. of Camb. was incorporated of Oxford, and on the 23 Feb. following took the degree of B.D. as of Exeter Coll. He was admitted to the rectory of Bridford, Dev. 25 Jan. 1638. Patron King Charles, by reason of the minority of Simon Leach, Esq. His successor W^m Garnett was admitted 6 May 1645. "It appears that Grosse had been convicted by a jury, of taking an active part in the Rebellion, and had become an outlaw." Nevertheless in 1647 he was instituted to the Vicarage of Ashburton, where "in a good old age" he died, and was buried the 10th of April, 1654. A son, bearing both his names, became a student in Exeter Coll. Oxon. in 1638.

Cf. Wood's *Ath. Oxon.* iii. 358, and *Fasti*, i. 466; Brook's *Lives of the Puritans*, iii. 228; Oliver's *Eccles. Antiq.* ii. 131; IX. *Report Hist. MSS. Commission*, p. 276; Worthy's *Ashburton*, p. 22.

1. Deaths Deliverance, and Eliahs Fiery Charet, or The holy Mans Tryumph after Death. Delivered in two Sermons preached at Plymovth, the one the 16. the other the 19. of August: the former at the funerall of Thomas Sherwill, an Eminent and pious Magistrate of that place. 1631. By Alexander Grosse, Pastor of Plympton S. Mary. Psal. 37. 37. Marke the . . . is peace.

LONDON Printed by *I. D.* for *James Boler*, and are to bee sold at the sign of the *Mary-gold* in *S. Pauls CHVRCH-YARD*. 1632.

4to. Title and Epistle Dedicatorie to "Iohn Waddon Maior of Plymouth," 6 leaves; Sermon on Isa. lviii. 1, 2, pp. 19. Then this title:—

"Eliahs Fiery Charet or the holy mans tryvmpth after Death. A Sermon preached at Plymouth the 19. of August 1631, at the funerall of the late faithfull and worthy Minister of Iesus Christ Matthias Nicols, Bachelour in Divinitie, and late Preacher to the Towne of Plymovth. By A. G. 1 Sam. 25. 1. And Samvell died . . . Ramah."

1 leaf; Sermon on 2 Kings ii. 11, 12, pp. 23 to 52. [J.I.D.]

1b. Deaths Deliverance . . . London, Printed by *T. Paine* for *F. Eaglesfield*, 1640.

8vo. The copy is imperfect, having the sermon on *T. Sherwill* only. [Brit. Mus.]

2. Sweet and Soule-Perswading Indvcements Leading unto Christ. Dedvced, 1. From the Consideration of Mans Misery, Emptinesse, Basenesse, and Dishonour without Christ. 2. From the Meditation of the Comforts attending the Soules receiving of Christ. 3. From the Apprehension of the Joy and Excellency of Christs living in Man; The whole singularly sweetning the Meditation of Christ to the Soule of Man. [Quotations, 11 lines.] By Alexander Grosse, Minister of Christ.

LONDON, Printed by *G. M.* for *Iohn Bartlet* at the signe of the *Gilt-Cup* neare *Saint Austins-Gate*. MDCXXXII. [This date must be a misprint for 1642.]

4to. Title and "To the Christian Reader," 8 leaves; Treatise on Psal. cxviii. 26, pp. 1-116. Then this title:

The Mystery of Self-Denyall; or, The Cessation of Mans living to himselfe: And The Inchoation of Christs living in Man. Discoursing of the necessity, utility, and comfort of mans prostrating himselfe, and all that is his under Christ: Discovering the danger of Self-seeking, Self-admiration, and Self-exaltation, and also opening the Mystery, Comfort, and Excellency of Christ living in Man. The

whole conducing to the working of Man out of himselfe into Christ. [Quotations, 4 lines.] By Alexander Grosse, B.D. Minister of the Gospell, and Pastor of Bridford near Exon in Devon-shire.

LONDON, Printed by *G. M.* for *John Bartlet*, at the Signe of the Gilt Cup near Saint *Austins* Gate, 1642.

1 leaf; Treatise on Gal. ii. 20, pp. 117–287. Then another title:—

Mans Misery withovt Christ. Opening the sinfull, perplexed, dishonourable and Soul destroying Condition of Man without Christ, tending to the driving and drawing of every man out of himselfe unto Christ. By Alexander Grosse, B.D. Minister of the Gospell, and Pastor of Bridford near Exon in Devon-shire.

LONDON, Printed by *G. M.* for *John Bartlet*, at the Signe of the Gilt Cup near Saint *Austins* Gate, 1642.

1 leaf; Treatise on Eph. ii. 12, pp. 291–440; Table, 10 leaves. [J.I.D.]

3. Christ the Christians Choice. Or A Sermon preached at the Funerall of Mr. John Caws one of the Magistrates of the Famovs Corporation of Plymouth. March The 29. Anno Dom. 1645. By Alexander Grosse, B.D. and Pastor of Bridfoad. (*sic*) [Quotations, 7 lines.]

LONDON Printed by *R. B.* for *John Bartlet* at the Gilt Cup under St. *Augustines* Gate, 1645.

4to. pp. 24. Text, Philip. i. 23. [J.I.D.]

4. The Happiness of enjoying, and making a trve and speedy use of Christ. Setting forth, First, The Fulnes of Christ. Secondly, The danger of neglecting Christ, and the opportunity of Grace. Thirdly, The Lord Jesus the Soules last refuge. All tending to the making of Christ most amiable and glorious in the eyes, and most joyous and pleasant, sweet and satisfactory to the Soules of all beleiving Christians. Whereunto is added, S. Pauls Legacie, or Farewell to the men of Corinth. By Alexander Grosse B.D. Minister of the Gospell, and Pastor of Bridford. [Quotations, 6 lines.]

LONDON: Printed by *Tho: Brudenell*, for *John Bartlet*, at the signe of the gilt Cup neere S. *Austins* Gate, 1647.

4to. Title and Epistle Dedicatory to "the Inhabitants of *Plympton St. Mary*," 6 leaves; A Table, 2 leaves; Christs Fvlnesse Transcendent, on Col. ii. 9, 10, pp. 1–101. Then this title:—

The Dolefulnes and Danger of Neglecting Christ, and the Opportvnity of Grace. [Quotations, 13 lines.]

London, Printed by *T. B.* for *John Bartlet* at the gilt Cup neer *St. Austins* gate, 1646.

1 leaf; *The Danger &c.* on *Luke* 19, 41, 42, pp. 105–132.
Then another title :—

The Lord Jesus the Sovls Last Refvge. By *Alexander Grosse*, B. of *Divinity*, at the *Funerall* [of] *Mr. S. H.* [Quotations, 12 lines.]

LONDON: Printed by *T. B.* for *John Bartlet* at the gilt Cup in *Pauls Church-yard*, 1646.

1 leaf; *Sermon* on *Rev.* 22, 20, pp. 135–150. Then a *Sermon* on *2 Cor.* xiii. 11, entitled “*Saint Pauls Legacie*,” pp. 151–178.

“*St. Pauls Legacie*” was the last sermon *Grosse* preached at *Plympton St. Mary*, in which he says :—
“*I have now served you more than two Apprentiships.*”
—“*In all this time of my service I was never hindered one Lords day by sickness from my Ministeriall labours.*”
—“*I was never suppressed nor restrained from the liberty and use of my Ministry by any opposition, though there have been adversaries both politick and powerfull.*”—
“*Though in this place I have had neither certainty nor competency to sustaine me and my family; yet the Lord hath elsewhere raised meanes to uphold me, and to enable me to continue the labours of my Ministry amongst you.*” [J.I.D.]

[*I* once met with an imperfect 8vo. vol. without title which contained part of this vol. dated 1640.]

5. *A Fiery Pillar of Heavenly Truth shewing the Way to a Blessed Life.* Composed by way of *Cathecism*, for the preservation of *God's People* from the spreading coils and pernicious enchantments of *Papism*, and other errors; for the detection of every man's condition, for the consolation of afflicted people, and for the direction of all sorts of people to *Life Eternall*. [Quotations from *Corinthians* and *Salvian*.] By *Alexander Grosse*, B.D. Minister of the Gospel and Pastor of *Bridfoard*. The sixth Edition, very much amended, with an addition of a very usefull Table not formerly printed.

London, Printed for *John Bartlet*, and are to be sold at the gilt Cup under *St. Augustines Gate*, 1649.

12mo. Title and The Contents, 3 leaves; *A Fiery Pillar*, pp. 3–104, in 7 chapters; *Advertisement*, 1 page; “*An explanation of such words in this Treatise as may seem somewhat hard to be understood,*” 3 pages. [Dr. W.'s Lib.]

[*Wood* mentions an edit. 1643 oct. or 12mo. *Darling*, 3rd edit. 1645, 12mo. *Watt*, 1663, 12mo.]

6. The Buddings and Blossoming of Old Truths: or, Severall practicall Points of Divinity, gathered out of that sacred Evangelist St. John, Chap. the third, from Verse 22. ad finem. By that worthy Light and Lamp of Heaven, Alexander Gross, Bach. of Divinity, and late Preacher of Ashberton, in Com. Devon.

LONDON, Printed by *W. Bentley* for *Andrew Crook*, at the signe of the green Dragon in *Pauls Church-yard*, 1656.

8vo. Title and "Epistle to the Reader" by "John Welden," "From my Study at *Stratley*, in *Armington, Com. Devon*," 5 leaves; pp. 454; [really 452, pp. 449 and 450 being omitted.]

Some notice of Grosse will be found in Weldons Epistle, who also says "This I shall promise the Reader, if he shall like of what is in this Book, I shall present him shortly with another of this Author." [J.L.D.]

Wood adds,—

"*The Anatomy of the Heart*—printed in Oct. This I have not seen, nor his book *On Sacred Things*, printed in tw."

I cannot trace either of these.

JERMIN (MICHAEL), D.D. (c 1591–1659.)

Born at Knowston, Devon; the son of Alex. J. merchant of Exeter. Entered Exeter College, Oxford, 1606, aged 15. Stood for a fellowship, when he and Nathanael Carpenter had equal votes, on which the Vice-Chancellor, Hy. Airay decided in favour of Carpenter, 30 June 1607. Elected scholar of Corpus Christi Coll. 23 Sept. 1608. B.A. 12 Oct. 1611. M.A. 24 Jan. 1614. D.D. of Leyden in Holland; incorporated in the same degree at Oxford, 27 July, 1624. Chaplain to the Lady Elizabeth, Queen of Bohemia. Also to Chas. I. Rector of St Martins, Ludgate, London, c. 1628. A great sufferer for his loyalty to Charles I. Died at Kermising, n^r Sevenokes, Kent, 14 Aug. 1659, and was buried in the chancel of the church there.

Cf. Wood's *Ath. Oxon.* iii. 475; and *Fasti*, i. 341, 357, 418; Newcourt, i. 415; Walker's *Sufferings*, ii. 171; Boase's *Reg. Exon. Coll.* 56.

1. Paraphrasticall Meditations, by way of Commentarie, upon the whole booke of the Proverbs of Solomon. Written by Michael Iermin, D. in Divinity. [Quotations, 5 lines.]

LONDON, Printed by R. Badger, for *Philemon Stephens* and *Christopher Meredith*, at the golden Lyon in St. PAULS Church-yard. 1638.

Folio. Title, and Epistle Dedicatory to King Charles, signed "Your Majesties most humble, and devoted Chaplaine,

and Subject, Michael Jermin," 2 leaves; To the Christian Reader, and *imprimatur* Ian. 23. 1637, Sa. Baker," 1 leaf; pp. 726 [a misprint for 729.] Tables, 13 leaves; Errata, 1 leaf. [J.I.D.]

2. A Commentary upon the whole booke of Ecclesiastes, or the Preacher. Wherein the original Hebrew text is carefully examined, our owne English Translation and others are duely viewed and compared, in which also the literall sense is chiefly considered, other senses as usefull are not omitted. The exposition of the ancient Fathers, and other ancient and classically Authours being diligently observed: the whole is also illustrated with frequent passages and Sentences taken out of them. [Quotations, 3 lines.] By Michael Jermin, Dr. in Divinitie, and Rect. of St. Martins Lud-gate, London.

LONDON: Printed by Ric. Hodgkinsonne, for JOHN CLARK, and are to be sold at his shop under Saint Peters Church in Corne-hill. 1639.

Folio. Title, Epistle Dedicatory "To the Sacred Majestie of The Lady Elizabeth Queene of Bohemia," "To the Christian Reader," and Sam. Baker's *imprimatur*, dated "Dec. 7. 1638," 3 leaves; pp. 457; "Coronis," and Errata, 1 leaf; Tables, 10 leaves. [J.I.D.]

["*Exemplary Life and Death of Mr — Jurdain*, printed in 4to. One Ferdin. Nicolls minister of S Mary Arches in Exeter, hath written *The Life and Death of Ignatius Jurdain sometimes Alderman of the City of Exeter*. Whether he be the same Jurdain, whose life Dr. Jermin wrote, I know not, for I have not seen it." Wood, iii. 475.]

"The Life and Death of Mr. Ignatius Jurdain, one of the Aldermen of the City of Exeter; who departed this Life, July 15th, 1640. Drawn up and published by Ferdinand Nicolls, Minister of the Gospel at Mary Arches, Exon. The Second Edition, enlarged by the Authour. London, Printed for Thomas Newberry, and are to be sold at his Shop at the Three Golden Lions on Corn-hill by the Royal Exchange, 1655. 12°, E in twelves."

Ded. to Simon Snow Esquire, Mayor, the Aldermen and Common Council of Exeter, Dec. 24. 1653. [J.I.D.]

[Nothing seemingly here relating to Mich. Jermin.]

[The Life of Ignatius Jurdain in the 2nd part of Sam Clark's *Martyrologie* fol. was taken from Ferd. Nicolls.

[The Fathers Instruction to his Child. Lond. 1658. 8vo. Wood, iii. 476.]

This I fail to trace.

KENDALL (GEORGE), D.D.

Born at Crofton, near Dawlish, in 1610, son of George K. Educated in the Grammar-School, Exeter. Entered Exeter College, Oxford, in 1626. Fellow 1630-1647. B.A. 3 June 1630. M.A. 9 May 1633. B.D. Jan. 1641-2. D.D. 4 July 1654. Appointed by the House of Commons Lecturer at Hemel Hempstead, 22 Aug. 1642. Rector of Blisland, Cornwall, 26 Nov. 1643; on the presentation of Chas. I.; Deprived 1655. Prebendary of Exeter Cath. 7 Feb. 1644-5; deprived in 1655; restored in 1660. Rector of St. Benedict, Gracechurch Street, London, 1653 [?]. Moderator of the first general assembly of the ministers of Devon, Oct. 18. 1655. Became rector of Kenton, Devon, in 1660. Deprived of all his preferments for nonconformity in 1662. Died at Crofton, 19th Aug. 1663.

Cf. Wood's *Ath. Oxon.* iii. 638, and *Fasti*, i. 453, 469. ii. 3, 162, 184; Calamy's *Account*, 289, and *Continuation*, 259; Oliver's *Eccles. Antiq.* i. 18. ii. 142; Maclean's *Trigg Minor*, i. 50, 52; Polwhele's *Devon*, ii. 153; Walker's *Sufferings*, ii. 31; Boase's *Reg. Exeter Coll.* 64, 69, 228; *Bib. Cornub.* i. 283; 6th *Report Hist. MSS. Com.* 8, 9, 10; Le Neve's *Fasti*, by Hardy, i. 424.

1. [Collyrium, or an Ointment to open the Eyes of the poor Cavaliers. Wood, iii. 638.]

2. ΘΕΟΚΡΑΤΙΑ : or a Vindication of the Doctrine commonly Received in the Reformed Churches concerning Gods Intentions of Special Grace and Favour to his Elect in the Death of Christ : as also His Prerogative, Power, Prescience, Providence, the Immutability of his Nature and Counsels, &c. from the attempts lately made against it, by Master John Goodwin in his book entituled Redemption Redeemed. Together with some digressions concerning the Impossibility of new Immanent Acts in God, the Possibility of Faiths being an instrument of Justification, and the nature of the Covenants of works and Grace. By George Kendall, B.D. sometimes Fellow of Exeter Col. in Oxford. [Quotations, Luke. 10. 21, 22, and Esaiiah. 46. 9, 7 lines.]

LONDON, Printed by *Tho. Ratcliffe*, and *Edw. Mottershed*, 1653.

Folio. Latin commendation signed "Jo. Owen, Academiae Oxon. Procancelarius," and another signed "Joshua Hoyle, Henr. Wilkinson. Professores in Theologia publici

in Acad: Oxon." 1 leaf; Title, 1 leaf; "Ad Almam Matrem Academiam Oxoniensem," by Kendall, dated "Quinto Kalend. Febr. MDCLII," 4 leaves; "To the Reverend Doctor Benjamin Whichcote, Provost of Kings-Colledg, and late Vice Chancellor of the University of Cambridge. Together with the rest of the Heads of Colledges and Students in Divinity in that Famous University," dated "Blisland near Bodmyn in Cornwall, Septemb. 14. 1652," 2 leaves; another "To my Right-Worthy Brethren, the Rector and Fellows with the rest of the students of Exeter-Colledg in Oxford, my ever Honoured Mother," dated "Sept. 15. 1652." 1 leaf; "A most humble. Request to the Reader," 6 leaves; "The Sum of this Discourse," and "Errata," 4 leaves; pp. 1-214; 1-157. [a misprint for 175]; 1-161; and 1 page of Errata, not numbered. [J.L.D.]

3. Sancti Sanciti. Or, the common Doctrine of the Perseverance of the Saints: As who are kept by the Power of God, through Faith unto Salvation. Vindicated from the attempts lately made against it, by Mr. John Goodwin, in the Digression of his Book which he was pleased to entitle Redemption Redeemed. Together with two Digressions: The one maintaining a specifical difference between the graces of the Saints; and whatsoever is found in men Unregenerate. The other, asserting God to be the sole Authour, of whatever difference of the Saints, from themselves, and others. As also an Appendix in Answer to Master Horne, goring all University-Learning. By George Kendall, B.D, sometimes Fellow of Exeter Col. in Oxford. John. 6. 39. . . . 1 John 3. 3. . . .

LONDON, Printed by *Tho. Ratcliffe*, and *Edw. Mottershed*. 1654.

Folio. Latin commendation, signed "John Owen, Academ. Oxon. Procan. Jos. Hoyle, Hen. Wilkinson." on a leaf before the title; Title, 1 leaf; "To the Reverend, Doctor Benjamin Whichcot, Provost of Kings-Colledge, and late Vice chancellor of the University of Cambridge; together with the rest of the Heads of Colledges, and Students in Divinity, in that famous University," dated "Blisland near Bodmin in Cornwall, Sept. 3, 1653," 7 pages; "The Stationer [Sa. Gellibrand] to the Reader," and a letter from "Jos. Hall, B.N." dated "Higham, March, 1652," 1 page; "Ad Almam Matrem Academiam Oxoniensem," "Datum ex claustris meis in Terrâ Beatâ Cornub. pridie Kalend. Sep. MDCLII." 7 leaves; "To the Reader," signed "Geo. Kendall," and dated "Gracechurch, London, March, 1. 1653," 14

leaves; Index, 2 leaves; pp. 1-130. 1-142. 1-141; 1 leaf blank; "A Fescue for a Horne-Book, or an Apology for University-Learning, as necessary for Countrey-Preachers," pp. 145-167. [J.I.D.]

4. A Verdict in the Case depending between Master J. Goodwin, and Master Howe, concerning the Heavens Preaching the Gospel, maintained by Master Goodwin in his Pagans Debt and Dowry, as well as his Redemption redeemed. By George Kendall, D.D.

This is prefix to *The Pagan Preacher Silenced*. . . . By *Obadiah Howe, A.M. and Pastor of Horne-castle in Lincolnshire*. London. 1655. 4to. The Verdict occupies pp. 1-11, and is dated at the end Feb. 6. 1654. [Bod.]

5. Fur pro Tribunali. Examen Dialogismi cui inscribitur Fur Prædestinatus. Accesservnt, Oratio de Doctrina Neo-Pelagiana habita Oxonii in Comitibus Julii ix. M.DC.LIV. Cl.V.G. Tuissii vita, & Vindiciæ à Calumniis & Sophismatis Francisci Annati Jesuitæ. Et Dissertatiuncula de novis actibus immanentibus sintne Deo ascribendi. Authore Georgio Kendallo, S.T.D.

OXONIÆ, Excudebat HEN. HALL Academiæ Typographus, Impensis THO. ROBINSON. M.DC.LVII

8vo. Title, 1 leaf; "Dilectis in Christo Fratribus, Almæ Matris Academiæ Oxoniensis, Filiis junioribus, G.K. . . ." "Dabam ex tuguriolo meo Croftoniensi April. 13. 1657." 4 leaves; "Cl. Doctissimæque Viro Georgio Kendallo, S.T.D: Johannes Owenus S:P:D:" "Dab: Oxon: ex Æd: Ch: Calendas April: 1657," 6 leaves; Errata, 1 leaf; Fur pro Tribunali. pp. 1-269; De Doctrina Neopelagianâ Oratio. . . ., pp. 1-60; then this title, "Tuissii Vita & Victoria. De Scientia media brevicula Dissertatio. In qua, Clarissimi viri Nomen à Calumniis, [&] Argumentum à Sophismatis Francisci Annati Jesuitæ Vindicantur . . .," 1 leaf; pp. 63-140; another title "Dissertatiuncula de Novis Actibus Immanentibus sintne Deo ascribendi? . . .," 1 leaf; pp. 141-219. The signatures are consecutive. [J.I.D.]

MAYNE (JASPER), D.D.

Born at Hatherleigh. Son of Jasper M.; baptized there 23 Nov. 1604. Educated at Westminster School. Entered Christ Church Coll, Oxon 1623 aged 19. Chosen a student in 1624. B.A. 21 Oct. 1628. M.A. 18 June 1631. Vicar of Cassington and of Pyrton, co. Oxford, both livings being in

the gift of his college. B.D. 1 Nov. 1642. D.D. 17 Jan. 1646. Chaplain to William Marquess of Newcastle. Suffered greatly for his loyalty, was ejected from his studentship and deprived of both his livings. He found refuge in the family of the Earl of Devonshire, until the Restoration, when he was restored to his former benefices. Made Canon of Christ Church in July 1660. Chaplain in Ordinary to Chas. II. Archdeacon of Chichester, 2 July 1660. Died 6 Dec. 1672, and was buried in Christ Church Cath. Oxon.

Cf. Wood's Ath. Oxon. iii. 971, and *Fasti*, i. 438, 460, ii. 36, 99; *Biog. Brit.* v. 3070; *Walker's Sufferings*, ii. 107; *Le Neve's Fasti* by Hardy, i. 261; *Baker's Biog. Dram.* i. pt. 2. p. 303; *Aubrey's Lives*, ii. 629.

1. The citye match. A comoedye. Presented to the king and queene at White-hall. Acted since at Black-friars by his Majesties Servants . . .

Oxford, Printed by Leonard Litchfield, Printer to the University. Anno Dom. M.DC.XXXIX.

Folio. Title, &c. 3 leaves; pp. 64; followed by one leaf. Reprinted in Dodsley's *Collection of Old Plays*. [Bod.]

2. The amorous warre. A Tragi-Comedy. Ovid Lib: 1. Amor: Militat omnis Amans: Et habet sua Castra Cupido. Printed in the Yeare 1648.

4to. Title, 1 leaf; pp. 84. [Bod.]

1b, 2b. Two plaies[:] the city match. A comoedy. And the amorous warre[,] a tragy-comoedy. Both long since written, By J. M. of Ch. Ch. in Oxon.

Oxford. Re-Printed by *Hen. Hall*, for *Ric. Davis*, 1658.

4to. Title, &c. 3 leaves; pp. 68; followed by the Epilogue on one page. [Bod.]

3. A Sermon concerning Unity & Agreement. Preached at Carfax Chvrch in Oxford, August 9, 1646. By One of the Students of Christ-Church. Rom. 12. 18. If it be possible, as much as lyeth in you, live peaceably with all men.

Printed in the Yeere clv loc XLVI.

4to. Title, 1 leaf; sermon on 1 Cor. i. 10. pp. 60. [J.I.D.]

I have another copy of this sermon which differs in no respect except in the title, where for "By One of the Students of Christ-Church," is substituted this: "By Jasper Mayne, D.D. and one of the Students of Christ-Church, Oxon."

4. A Sermon against False Prophets. Preached in St. Maries Chvrch in Oxford, shortly after the Surrender of that

Garrison. By Jasper Maine, D.D. and one of the Students at Christ-Church, Oxon. [Jer. 23. 16. 5 lines.]

Printed in the Yeere, clo loc XLVI.

4to. Title, 1 leaf; Sermon on Ezek. xxii. 28, pp. 38. [J.I.D.]

5. A late Printed Sermon against False Prophets, Vindicated by Letter from the causeless Aspersions of Mr. Francis Cheynell. By Jasper Mayne, D.D. the mis-understood Author of it. [Greek quotation (Luke 21. 19,) 2 lines.]

Printed in the yeare, clo loc XLVII.

4to. Title, 1 leaf; pp. 60. [J.I.D.]

6. OXAO-MAXIA. Or, the Peoples War, examined according to the Principles of Scripture & Reason, in Two of the most Plausible Pretences of it. In Answer to a Letter sent by a Person of Quality, who desired satisfaction. By Jasper Mayne, D.D. one of the Students of Ch. Ch. Oxon: [Greek quotation, (Rom. 13. 2.) 2 lines.]

Printed in the Yeare, 1647.

4to. Title, 1 leaf; pp. 38. Dated at the end, "June 7. 1647." [J.I.D.]

7. A Sermon against Schisme: or the Separations of these Times. Preacht in the Church of Wattlington in Oxfordshire, with some Interruption, September 11. 1652. At a publick dispute held there, between Jasper Mayne, D.D. and one ——— [Greek quotation (Matt. 13. 47.) 2 lines.]

LONDON, Printed for R. ROYSTON, at the Angel in Ivie-lane, 1652.

4to. Title, 1 leaf; pp. 22. Mayne's opponent was Jno. Pendarves; see *Bibliotheca Cornubiensis*, p. 444. [J.I.D.]

8. Certaine sermons and letters of defence and resolution, to some of the late Controversies of our Times. By Jas. Mayne, D.D.

LONDON, Printed for R. ROYSTON, at the Angel in Ivie-lane, 1653.

4to. Title, 1 leaf; Contents, 1 leaf; each tract has a separate title and pagination thus:—

1. A Sermon against Schisme, 1652, 1 leaf, and pp. 22.
2. A Sermon concerning Unity, 1647, 1 leaf, and pp. 43.
3. A Sermon against False Prophets, 1647, 1 leaf, and pp. 29.
4. The Sermon against False Prophets vindicated, 1647, 1 leaf, and pp. 60.
5. OXAO-MAXIA or the peoples War examined, 1647, 1 leaf, and pp. 38. [Bod.]

9. A Sermon preached at the Consecration of the Right Reverend Father in God, Herbert, Lord Bishop of Hereford. By Jasper Mayne, D.D. Canon of Christ-Church, and one of His Majesties Chaplains in Ordinary. John 20. 21. As my Father sent Me, so send I you.

LONDON: Printed for *R. Royston*, Bookseller to the Kings most Excellent Majesty, at the Angel in *Ivie-lane*, 1662.

4to. Title, and Epistle Dedicatory to . . . Brian Lord Bishop of Winchester, dated Feb. 26. 1661, 4 leaves; Sermon on 1 Tim. iv. 14, pp. 43. [J.I.D.]

The dedication is very creditable to Bp. Duppa, and has this acknowledgment of Mayne's obligations:—"To all this your Lordships continued kindnesses to me, by which I can compute my self almost grown aged in your Favours; your encouragement of my younger Studies, which grew up under your Example; your Rescue of me from a Shipwreck in the late undoing Times, when being tost, and stript of all, you were the Plank to save me, and threw me out a line which drew me safe to shore; are Reasons sufficient to let the World know, that of most sins I think Ingratitude the worst."

10. Concio ad Academiam Oxoniensem pro more habita inchoante Termino, Maii 27, 1662. A Jaspero Mayne, S.T.D. *Ædis Christi Præbendario*, Regiq; in ordine à Sacris. [Greek quotation (John 8. 36) 2 lines.]

LONDINI, Typis *J. Grismond*, & prostant apud *R. Royston* in *Ivie-lane*, 1662.

4to. Imprimatur and Title, 2 leaves; pp. 42; Text, Gal. v. 1. [J.I.D.]

My copy was bought at the sale of the late Mr. Jas. Crossley's library, and has this note in his hand:—"This 'Concio' of Jasper Mayne is very scarce. See his powerful description, at the latter end of this tract, of the Republicans and the Commonwealth. He finds fault with the clemency exercised at the Restoration, 'Regis Optimi Clementia, me iudice graviter peccavit quòd Crucem meritis ignovit et à patibulo liberavit' (p. 35.)"

11. Paradoxes, Problemes, Essayes, Characters, written by Dr. Donne Dean of Pauls: To which is added a Book of Epigrams: written in Latin by the same Author; translated into English by J: Maine, D.D. As also Ignatius his Conclave, a satyre . . .

London, Printed by *T. N.* for *Humphrey Mosley* at the *Prince's Armes* in *St. Pauls Churchyard*, 1652.

12mo. Title, Dedication, and Table, 8 leaves; pp. 219. "A Sheaf of Miscellany Epigrams. Written in Latin by J. D. Translated by J. Main D.D." occupies pp. 88-103. [J.I.D.]

12. Part of Lucian made English from the Originall, in 1638, by Jasper Mayne. To which are adjoyned those other Dialogues of Lucian as they were formerly translated by Mr. Francis Hicks. Oxford, 1664, Folio.

"Mayne is supposed to be the author of some lines 'on worthy master Shakspeare and his poems,' which were first printed in the folio edition of Shakspeare's plays, 1632, with the signature 'I.M.S.' Jasper Mayne, student." (Dr. Bliss in Wood, iii. 973.)

In the Catalogue of the Bodleian Library the following tract is attributed to Mayne:—

The difference about Church government ended: By taking away the Distinction of Government into Ecclesiastical and Civill; and proving the Government of the Civill Magistrate onely sufficient in a Christian Kingdom. Written by one that by making peace, prefers to be called a blessed childe of God, before preeminence in the world. J. M. D.D. Published according to Order.

London, Printed, by *R. L.* for *William Leake*, and are to be sold at his shop at the signe of the Crowne in Fleetstreet between the two Temple gates, 1646.

4to. 2 leaves; pp. 14.

Wood remarks, "Whether written by our Author Jasp. Mayne I cannot justly tell." The subject is so opposed to all we know of Mayne's views and conduct that we may safely conclude it did not come from his pen.

MAYNE (ZACH.), M.A.

Born at Exeter *circa* 1631. Entered at Christ Church Coll. Oxon, and removed to Magdalen College. B.A. 11 April, 1652. M.A. 6 July 1654. Fellow. Ejected from his fellowship at the Restoration. Conformed. Became Schoolmaster at Dalwood, Dorset, *c.* 1671. Appointed Master of the Grammar School, Exeter, 19 January 1689; where he died 11 Nov. 1694 aged *c.* 63, and was buried at Dalwood.

Cf. Wood's *Ath. Oxon.* iv. 411, and *Fasti*, ii. 169, 182; Carlisle's *Endowed Grammar Schools*, i. 317; Carlyle's *Cromwell*, 1846, iii. 489.

St. Paul's Travailing-pangs, with his Legal-Galatians, or, A Treatise of Justification; wherein these two Assertions are chiefly evinced, viz. 1. That Justification is not by the

Law, but by Faith. 2. That yet men are generally prone to seek Justification by the Law. Together with several Characters assigned of a Legal and Evangelical spirit. To which is added (by way of Appendix) the manner of transferring Justification from the Law to Faith. By Zach. Mayne, M.A. [Quotations, 11 lines.]

London, Printed by M. I. for Ioseph Leigh at the upper end of *Bazing hall* street near the Naggs head Tavern, and *Henry Crippys* [*sic*] in Popes-head Alley. 1662.

8vo. Title and Preface, signed "Zach. Mayne," 11 leaves; "An Advertisement unto the Reader concerning the Author, Subject, and contents of the Treatise ensuing," signed "J. G." 7 leaves; Errata, 1 leaf; pp. 358. [J.L.D.]

Wood was unable to see this book, and makes of it two; from internal evidence I conclude that J. G. was the learned John Goodwin; this gives special interest to the volume.

2. Sanctification by Faith vindicated: in a discourse on the Seventh Chapter of the Epistle of St. Paul to the Romans, compared with the Sixth and Eighth Chapters of the same Epistle. Written by Zachary Mayne, M.A. To which is prefixt a Preface by Mr. Rob. Burscough. Licensed, Sept. 11th. 1693.

LONDON: Printed by W. O. for John Salusbury, and Sold by Walter Dight in Exon. MDCXCIII.

4to. Title, 1 leaf; Preface, pp. i-vii; Epistle, pp. i-vi; Analysis, pp. vii, viii; Discourse, pp. 1-39; Appendix, pp. 40, 41; 2nd Appendix, pp. 42, 43; Books printed for John Salusbury, 1 page. [Bod.]

ROWE (JOHN), M.A. *Nonconformist*.

Son of John Rowe of Crediton: born there in 1626. Entered New Coll. Oxford. Removed to Cambridge where he took his B.A. degree. Returned to Oxford and was incorporated as B.A. of Cambridge, 8 Dec. 1648. Admitted M.A. 12 Dec. 1648. Made fellow of C.C.C. Oxon. Became minister at Witney, Oxfordshire. In 1654 was appointed by Cromwell rector of Clare portion, Tiverton. On the death of Wm. Strong, he succeeded him as preacher at Westminster Abbey towards the close of the same year. Ejected in 1660. Died 12 Oct. 1677, in the 52nd year of his age, and was buried in Bunhill Fields.

Cf. Wood's *Ath. Oxon.* iii. 1128, and *Fasti* ii. 108, 9; Calamy's *Account* 39, and *Continuation* 59; Wilson's *Hist. Diss. Churches*, iii. 156; Harding's *Hist. Tiverton*, iv. 46; Jones's *Bunhill Memorials*, 245.

1. Tragi-Comcedia. Being a brief relation of the strange and Wonderfull hand of God discovered at Witny, in the Comedy Acted there February the third, where there were some Slaine, many Hurt, with severall other Remarkable Passages. Together with what was Preached in three Sermons on that occasion from Rom. 1. 18. Both which may serve as some check to the Growing Atheisme of the Present Age. By John Rowe of C.C.C. in Oxford, Lecturer in the Towne of Witny . . .

Oxford, Printed by L. LICHFIELD, For HENRY CRIPPS. Anno Dom. 1653.

4to. 10 leaves; pp. 81. [Bod.]

2. Man's duty in Magnifying Gods work. Discovered in a Sermon Preached before the Parliament, Octob. 8. 1656. Being appointed as a Day of Publick Thanks-giving, for the great Victory obtained by a part of the Navy belonging unto this Common-wealth, against the Spanish-Fleet, in its return from the West-Indies. By John Rowe, Preacher of the Word at the Abbey-Church in Westminster.

London, Printed by *Robert White*, for *Francis Tyton*, at the Three Daggers near the Inner-Temple-Gate in Fleet-street. 1656.

4to. 4 leaves; pp. 26. Text, Job, xxxvi. 24, 25. Order granting the priviledge of printing dated, Thursday the ninth of Octob. 1656. [Bod.]

3. Heavenly-mindedness, and Earthly-mindedness. In Two Parts. With an Appendix concerning Laying hold on Eternal life. By John Rowe.

LONDON: Printed by *J. C.* for *Francis Tyton*, at the three Daggers in Fleet-street. MDC LXXII.

Sm. 8vo. Title and To the Reader, 4 leaves—On Col. iii. 1. 2. pp. 208; Appendix, on 1 Tim. vi. 12, pp. 209–256. [J.I.D.]

4. The Life and Death of Mr. John Rowe of Crediton in Devon. Follow me as I follow Christ. 1 Cor. 11. Whose faith follow, considering the end of their conversation. Heb. 13. 7.

LONDON Printed for *Francis Tyton* at the three Daggers in Fleet-street, 1673. [Anon.]

12mo. Title and To the Reader, 3 leaves; Preface signed "Theophilus Gale," 8 leaves; pp. 127; Books printed for F. Tyton, [pp. iv.] [J.I.D.]

Davidson (*Bibliotheca Devoniensis*, p. 193) and Hazlitt (*Collections and Notes*, 1876, p. 484), incorrectly ascribe this book to Theophilus Gale.

5. The Saints Temptations, wherein the Nature, Kinds, Occasion of Temptation, and the Duty of the Saints under Temptation are laid forth. As also the Saints Great Fence against Temptation *viz.* Divine Grace: Wherein the Nature, Excellency, and Necessity of the Grace of God is displayed in several Sermons. By John Rowe, Minister of the Gospel.

LONDON, Printed for *Francis Tyton* at the three Daggers in *Fleet-street*, 1675.

8vo. Title and To the Reader, signed John Rowe, 4 leaves; pp. 431; Books sold by F. Tyton, 1 leaf. The vol. contains 19 Sermons, *viz.* 14 on 2 Cor. xii. 7, 8, 9, and 5 on Solomon's Song, i. 4. [J.I.D.]

6. Emmanuel or the Love of Christ Explicated and Applied in his Incarnation, Being made under the Law, and his Satisfaction, in xxx Sermons. Preached by John Row, Minister of God's Word; and Published by Samuel Lee.

London, Printed for Francis Tyton, Book-seller at the Three Daggers near the Inner Temple-Gate in Fleetstreet 1680.

8vo. Title, and "To the Pious Reader," signed "Samvel Lee From Bignal near Bisseter Sept. 13, 1679," 8 leaves; Emmanuel, pp. 1-504, being 20 sermons and not 30 as stated on the title; or A to Ii in eights; Kk, in fours. [B.M.]

William Strong's *XXXI Select Sermons*, 1656, 4to, has an Address to the Reader, 1 leaf, signed by Thomas Manton, John Rowe, and George Griffith. [J.I.D.]

The same writers *Communion with God in Ordinances, the Saints Priviledge and Duty*. 1656, 12mo, has an Address to the Reader, 4 leaves, signed John Rowe. [J.I.D.]

The Worm that Dyeth not, or Hell Torments, in the Certainty and Eternity of them. By W^m Strong. 1672, 12mo, has an Address to the Reader, 2 leaves, signed Tho. Manton. J. Rowe. [J.I.D.]

SCLATER (WILLIAM), D.D.

Son of Dr. Will: Sclater, vicar of Pitminster, co. Som.; where he was born. Educated at Eton, Admitted from thence to King's College, Cambridge, 1626. Fellow, B.A. M.A. B.D. D.D. 1651. In 1639 we find him Preacher at S. Martins, Exon. Collated to a prebend in Exeter Cathedral, 18 Sept. 1641. Admitted Vicar of Collumpton, Devon, 4 Feb. 1644. Minister of St. Peter le Poor, Broad Street, London, in Feb. 1651-2.

Died before 23 Mar. 1660–1, when Geo. Carey succeeded to his prebend.

Cf. Wood's Ath. Oxon. iii. 229; *Oliver's Eccles. Ant.* i. 114; *Walker's Suff.* ii. 31; *Fuller's Worthies*, i. 171; *Le Neve's Fasti*, by Hardy, i. 424.

1. The worthy Communicant rewarded. Laid forth in a Sermon, on John 6. 54. preached in the Cathedrall of St. Peter in Exeter, on Low-Sunday, being the 21. of Aprill, Anno 1639. By William Sclater, master of Arts, late Fellow of Kings Colledge in Cambridge, now Chaplaine of the Right Reverend Father in God the Lord Bishop's Baronry of Saint Stephens, and Preacher also at S. Martins in the same City . . .

London, Printed by R. Y. for G. Lathum at the Bishops head in Pauls Church-yard.

4to. Title and Epistle Dedicatorie to Dr. Peterson, Dean of Exeter, dated May, 11. 1639, 5 leaves; pp. 79. [Bod.]

2. Death's summons, and the saints duty. Laid forth first summarily in a Sermon on 2. King. 20. 1. in the Cathedrall of St. Peter in Exeter, Janu. 24. 1638. at the solemne Funerall of a well-deserving Citizen. Since somewhat enlarged for the Common good, by William Sclater, Master of Arts, late Fellow of Kings Colledge in Cambridge, now a Preacher of Gods Word in the City of Exeter . . .

London: Printed by *Richard Hodgkinson*, 1640.

4to. Title, &c. 4 leaves; pp. 158. The Epistle dedicatory is dated 12 Febr. 1639; and the Imprimatur, Novem. 7th 1639. [Bod.]

3. The Remedie of Schisme. Or, a Mean to settle the Divisions of the Times. Set forth in a seasonable Sermon before an Honorable Assembly in the City of London. By William Sclater, Batchelar in Divinitie, Preacher of Gods Word in the City of Exeter . . .

London: Printed by *T. Paine*, and *M. Symmons*, for *Tho. Slater* at the Swan in Duck-Lane, 1642.

4to. Title and Epistle Dedicatory, dated March 2. 1641, 2 leaves; pp. 53. Text, 1 Cor. xi. 18, 19. [Bod.]

In his funeral Sermon for Wheelock, Sclater refers to this sermon as preached at Pauls, Lond. 1640.

3b. The Remedy of Schisme: or, a Meane to settle the Divisions of the Times. Set forth in a seasonable Sermon before an Honourable Assembly in the City of London, now, after some time revised, and for the common good published. By William Sclater, Doctor in Divinity, and Preacher of Gods Word at St Peter the Poore in Broad-street, London. [Quotations 4 lines.]

LONDON, Printed for *Thomas Slater*, and are to be sold at his shop at the Sign of the *Angel* in *Duck-lane*, 1652.

- 4to. Title, 1 leaf; Epistle Dedicatory to "... my constant Hearers in the Parish of S. Peter the Poor ..." dated "From my Study in Broad-street, Lond. Decem. 29. 1651," 2 leaves; pp. 53. [J.I.D.]

Is not this an issue of unsold copies of 1642 with a new title page and Epistle Dedicatory?

4. Papisto - Mastix, or Deborah's Prayer against Gods Enemies, Judg. 5, 31. Explicated and Applied, in the Cathedrall of Saint Peter in Exon, November the fift, 1641. By William Sclater, Batchelat in Divinity, Prebend of that Church. [Ps. 68. 1., four lines.]

LONDON, Printed by *Ric. Hodgkinsonne* for *Daniel Frere*, and are to be sold at his shop at the signe of the red-Bull in little-Britaine. 1642.

- 4to. Title, 1 leaf; "To the truly Noble, and eminent Example of the best worth, Mr. Henry Murray, Esquire, one of the Groomes of his M^{ties}. Bedchamber," dated Febr. 7. 1641., 1 leaf; pp. 60. [J.I.D.]

5. *Εν χαίρει λόγος*. Sive Concio ad Clerum, Latine habita in Ecclesiâ B. Mariæ Cantabrigiæ, Jun. 17. 1651. De Naturâ, Necessitate, & Fine Hæresium. A Guilielmo Sclatero SS. Theologiæ Doctore, Collegii Regalis in eâdem Academiâ non ita pridem socio: postea apud Exonienses, & Collomptonenses in comitatu Devon: Nunc tandem apud S. Petrum P. in vico vulgò vocato Broad street, in Civitate Londinensi, Concionatore. [Quotations, 9 lines.]

LONDINI, Excudebat *Guilielmus Bentley* Typographus, pro *Richardo Ireland* & *Antonio Nickolson*, Bibliopolis *Cantabrigiæ*. 1652.

- 4to. Title, 1 leaf; Epistola Dedicatoria, "Illustrissimo ac magnificentissimo Domino, *Henrico, Dorcestriæ Marchioni*, Comiti *Kingston*: Vice-Comiti *Newark*: Domini *Pierrepont*, & *Manvers*, &c. dated Lond. Feb. 10. 1651, and signed *Guilielmus Sclaterus*, 3 leaves; "Ministerio Anglicano (præsertim verò Londinensi) Orthodoxo, Salutem." dated Feb. 14. 1651. Gul. Sclaterus. 2 leaves; Concio ad Clerum, 1 Cor. xi. 19. pp. 62. [Dr. W's Lib.]

6. Civil Magistracy by Divine Authority, asserted, and laid forth in a Sermon, Preached at the Assizes holden at Winchester, for the County of South-Hampton, on Thursday the 4th day of March, 164 $\frac{1}{2}$. By William Sclater, Doctor in Divinity, Preacher of the Word of God in Broadstreet, London. [Quotations, 7 lines.]

LONDON, Printed by *Thomas Masey* for WILLIAM ROYBOULD, at the Unicorn [*sic*] in *Paul's Church-yard*, neer the Little North Door. MDC LIII.

- 4to. Title, 1 leaf; Epistle Dedicatory "To the Worshipfull John Trott, of Laverstoke Esquire; High Sheriffe of the County of Southampton," 2 leaves; sermon on 2 Chron. xix. 6, 7. pp. 45. [Dr. W's Lib.]

"How happy then must your Father (to whose Encouragements and Liberality I owe many Acknowledgements) bee esteemed in such a Son? being the staffe and comfort of his old Age." (*Ep. Ded.*)

7. The Crowne of Righteousness: or, the glorious Reward of Fidelity in the Discharge of our Duty. As it was laid forth in a Sermon, preached in S. Botolphs Aldersgate, London, Sept. 25. 1653. At the solemn Funerall of Mr. Abrah: Wheelock, B.D. The first Publick Professor, and Reader of Arabick, and of the Saxon, in the University of Cambridge. Whereunto is added An encomium of him. By William Sclater, Doctor in Divinity, Now Preacher of the Word of God in Broad-street, Lond. . . .

LONDON, Printed by *J. G.* for *John Clarke*, and are to be sold at his shop under S. Peters Church in Cornhill. 1654.

- 4to Title, &c. 2 leaves; pp. 34. Text 2 Tim. iv. 7, 8. [Bod.]

Reprinted in *The House of Mourning*, 1672, fol. p. 597-610.

8. A divine cordiall for a Devout Soule. Composed out of a serious Discourse upon the Sinne against the Holy Ghost: As it was laid open in the full Nature and Appendices thereof. In a Sermon Preached at Taunton in the County of Somerset, upon Monday, April 4. 1653. In the Assize Week. By William Sclater, Doctor in Divinity. Now Preacher of the Word of God in Broadstreet London. . . .

London: Printed by *M. Simmons* And are to be sould by *William Hope* at the Blew Boare, behind the Exchange. 1676.

- 4to. Title &c. 2 leaves; pp. 64; Text 1 John v. 16, 17. [Bod.]

William Sclater also published the five books following, written by his Father.

1. Three Sermons preached by William Sclater, Doctor of Divinity, and Minister of the Word of God at Pitmister in Sommersetshire. Now published by his Sonne of Kings Colledge in Cambridge.

LONDON, Printed by THOMAS HARPER for *Robert Allot*, and

are to be sold at his shop in *Pauls Churchyard* at the signe of the blacke Beare. 1629.

4to. Title, 1 leaf; then a title "A Sermon preached at S^t. Maries in the Vniuersity of Cambridge. By . . . [as before] . . . 1629," 1 leaf; Epistle Dedicatory "To — Mistresse Iane Still, together with her tender branches at Hutton in Sommerset," dated "From my Chamber in Kings Colledge in Cambridge. Nou. 18. 1628," and signed "William Sclater," and "To the Reader," 2 leaves; sermon "The Spiritvall Warfare" on 1 Pet. ii. 11. pp. 16. Then this title, "A Sermon preached at Tanton in Sommerset. By . . . [as before] . . . 1629," 1 leaf; Epistle Dedicatory "To — Mr. Edward Warre, Esquire: and — Elizabeth his Wife, at Chipley in Sommerset," dated and signed as above, 2 leaves; To the Reader, 1 leaf; sermon on 2 Kings ix. 31, pp. 17–39; Then this title, "A Fvnerall Sermon preached at the Buriall of the Right Worshipfull Mr. Iohn Colles Esquier, one of his Maiesties Iustices of Peace and Quorum in Sommersetshire Anno Dom. 1607. By William Sclater, of Kings Colledge in Cambridge Minister of Gods word at Pitmister. London . . . [as before] . . . 1629," 1 leaf; Epistle Dedicatory "To the Worshipfull Mr. George Colles, Esquire," dated and signed as above, 1 leaf; The Preface, 3 leaves; sermon on Heb. ix. 27, 28, pp. 19. [Dr. W's Lib.]

2. Vtriusque Epistolæ ad Corinthios Explicatio Analytica. Vnâ cum scholiis: Authore Gul. Sclatero SS. Theol. Doctore, Nunc tandem à Filio suo Coll. Regalis in Academia Cantabr. Socio in lucem edita. [Quotations, 4 lines.]

OXONIAE. Excudebat GUILIELMUS TURNER. An. Dom. M.DC.XXXI.

4to. Title, 1 leaf; Epistola Dedicatoria, "Reverendissimo, Litteratissimoque EDVARDO KELLETO, SS. Theolog. Doctori, sancti Petri apud Exonienses Residentiario: Nec non & eximie pietatis, summæq; eruditionis viro M^{ro} Georgio Goadio, Coll: Regalis in Academia Cantabrig. Socio, suo non ita pridem Tutori dilectissimo, Gulielmus Sclaterus S. P. D." 3 leaves; Lectori Salutem, 1 leaf; errata, 1 leaf; pp. 260. [Dr. W's Lib.]

3. Sermons Experimentall: on Psalmes cxvi. & cxvii. Very Vsefull for a Wounded Spirit. By William Slater [sic] D.D. sometimes Rector of Linsham, and Vicar of Pitmister, in Symmerset Shire.

Published by his Son William Slater, M^r of Arts, late Fellow of Kings Colledge in Cambridge, now a Priest, and

Preacher of the Gospel in the City of Exeter, in Devon-Shire.
[Quotations 3 lines.]

LONDON, Printed by *John Raworth*, for *Nathaniel Butter*, and are to be sold at his shop, at the signe of the Pide-Bull, neer Saint Augustines-Gate. 1638.

4to. Imprimatur, dated Maii 11, 1638, 1 leaf; Title, 1 leaf; To the Reader, dated from Exon. Iun. 2. 1638. and signed, "Wil. Sclater," 2 leaves: pp. 221. [Dr. W's Lib.]

"Meditated, and Preached by him after his recovery from a dangerous sickness, and his being stricken with the fit of an Apoplexy, when actually Preaching in his Pulpit at Pitmister."

4. A Brief, and Plain Commentary, with Notes: Not more useful, than seasonable, upon the whole Prophecie of Malachy. Delivered, Sermon-wise, Divers years since, at Pitmister, in Summerset. By William Sclater, Doctor in Divinity, then Minister of that Parish.

Now, Published by his Son William Sclater, Batchelar in Divinity, late Fellow of Kings Colledg in Cambrig, now minister of Collompton in Devon. Published according to Order.

London. Printed by J. L. for *Christopher Meredith* at the sign of the Crane in *Pauls Church-yard*. 1650.

4to. Title, 1 leaf; Epistle Dedicatory "To — Mr. Henry Walrond of Bradfield, in the County of Devon, Esquire," dated "From my study in Collompton, Sept. 1. 1648." [pp. xv.]; "To all Christian and charitable Readers: but, with more specialty, to my loving Countrymen, the Parishioners of Pitmister . . ." and "Imprimatur, Edmond Calamy," [pp. iv.]; A Catalogue of Dr. Sclaters Books, and Errata, [pp. iii.]; pp. 203; Table [pp. v.] [Dr. W's Lib.]

"I cannot but well hope from so much candor, and gravitie, for a courteous entertainment of a suitor that comes thus (in his name) to *Bradfield*, And the rather, for that I have been informed of your Noble acknowledgements, that *Doctor Sclater's* ministry was, under God, one of the (first) means of your calling, at least of your firmer establishment, in your first, right wayes of truth and godliness; insomuch, that I begin to think, on a sudden, you might personally be an Auditor of some of these very Sermons, the sum whereof I now crave the favour to present you with." *Ep. Ded.*

5. An Exposition with Notes on the whole Fourth Chapter to the Romanes. Wherein the grand Question of Justification by Faith alone without Works, is controverted, stated, cleared,

and fully resolved, to the satisfaction of any judicious, conscientious Protestant. Together with a variety of other solid observations, interwoven throughout the Work. By William Sclater, Doctor in Divinity, sometimes Minister of Gods word at Pitminster, in Summerset. Now, Published by his Son William Sclater, Batchelar in Divinity, Minister at Collompton in Devon. Licensed, Entred, and Printed according to Order.

London, Printed by J. L. for Christopher Meredith at the sign of the Crane in Pauls Church-yard 1650.

- 4to. Title, 1 leaf; Epistle Dedicatory "To the Right Worshipfull John Bampffield of Poltimore, in the County of Devon. Esquire, a most eximious, and exemplary Worthy of the West, a full Paradise of Gods Blessings," dated "From my study in Collompton, April 3. 1650," 5 leaves; "To all Christian, and judicious Readers; but with more specialty [*sic*] of respect to my loving, and constant Hearers, of the Town, and Parish of Collompton, in the County of Devon," 2 leaves; pp. 189, and 1 p. not numbered. [J.L.D.]

A Catalogue of his books, set forth by his son, since his decease, prefixed to his *Commentary on Malachy*, 1650, after mentioning the five works, just described, concludes:—

"6. Some remainders there yet are of his lucubrations upon good part of the *Revelation*, and some more Scriptures competently entire, besides other things, which as the parcels of a broken Picture, express the Authours gravity, and diligence: More may be hereafter published if these finde welcome, or, if industry, and learning, meet with encouragements."

STEPHENS (WILLIAM), M.A.

Son of the Rev. Lewis Stephens. Born at Menheniot, Cornwall. Entered Exeter College Oxford. Matriculated 26 Feb. 170 $\frac{1}{4}$ aged 15. Chaplain Fellow 12 Mar. 171 $\frac{1}{4}$; resigned 17 Apr. 1719. B.A. Oct. 13. 1711. M.A. June 28, 1715. One of the Vicars of Bampton, Oxford, 17 Apr. 1718; resigned 1723. Instituted Vicar of St Andrew, Plymouth 4 Oct. 1723. Died 16 Mar. 173 $\frac{1}{2}$ and was buried the 18th in the chancel of St Andrew.

Cf. Boase, *Register Exeter Coll.* 90; *Cat. Oxford Grad.*; *Bibliotheca Cornubiensis*, ii. 688; Brooking Rowe's *Eccles. Hist. Old Plymouth*, pt. ii. 41.

1. The Personality and Divinity of the Holy Ghost prov'd from Scripture, and the Ante-Nicene Fathers. A sermon

Preach'd before the University of Oxford, at St. Mary's, on St. Matthias-Day, Feb. 24th 1714. In which also Mons. Le-Clerc's Charge on the Fathers, as holding the Unity of the Divine Essence to be a Specificical one, is shown to be groundless. By William Stephens M.A. Fellow of Exeter College, Oxford. Publish'd at the request of Mr. Vice-Chancellor.

Oxford, Printed at the Theater for *John and Sam. Wilmot* Booksellers; and are to be sold by *J. Knapton, W. Taylor, W. Churchill, Jonas Brown,* and *John Morphew* Booksellers in London. 1717. Price 6d.

8vo. Printed in fours. Title &c. 2 leaves; pp. 46, followed by one leaf on which is an advertisement. The Imprimatur is dated July 18, 1717. Text. Acts v. 3. 4. [Bod.]

1b. The Personality and Divinity of the Holy Ghost. . . . The Second Edition.

Oxford, Printed by *L. Lichfield*, for *Sam. Wilmot*, Bookseller: and are to be Sold by *J. Knapton, R. Knaplock, W. and J. Innys*, in St. Paul's and *J. Roberts*, in Warwick-Lane London. 1721. Price Six-Pence.

8vo. Printed in fours. Title, &c. 2 leaves, pp. 36. [Bod.]

2. The Catholick Doctrine concerning the Union of the two Natures in the One Person of Christ Stated and Vindicated. A sermon Preach'd at the Triennial Visitation of the Right Reverend Father in God, John, Lord Bishop of Oxford; Held at Witney, on Tuesday, July 21. 1719. In which also Dr. Bennets late Notion, of the total Quiescence of the Divine Nature in our Saviour during his Ministry, is Consider'd and Examin'd. By William Stephens, A.M. Vicar of Bampton, late Fellow of Exeter College in Oxford. Publish'd at the Request of his Lordship and the Clergy. . . .

Oxford, Printed at the Theatre for *Sam. Wilmot*: and are to be sold by *Awn. Churchill, R. Sare, J. Knapton, W. Innys,* and *J. Morphew*, Booksellers in London, 1719.

8vo. Printed in fours. Title, &c., 2 leaves; pp. 31; followed by one page of advertisements. The Imprimatur is dated Oct. 2. 1719. Text, John i. 14. [Bod.]

3. The Divine Persons One God by an Unity of Nature: Or, That our Saviour is One God with his Father, by an Eternal Generation from his Substance, Asserted from Scripture and the Ante-Nicene Fathers. A sermon preach'd before the University of Oxford, at St. Mary's, on Sunday, August the 5th 1722. By William Stephens, M.A. Vicar of Bampton, late Fellow of Exeter College in Oxford. . . .

Oxford: Printed by *L. Lichfield*, for *S. Wilmot*, Bookseller: and sold by *J. Knapton*, *R. Knaplock*, *W.* and *J. Innys*, in *St. Paul's Church-yard*, and *J. Roberts*, in *Warwick-Lane*, London. 1722. Price Six-pence.

8vo. printed in fours; pp. 52. Imprimatur dated Aug. 17. 1722. Text. Heb. i. 6. [Bod.]

3b. [Second Edition, 8vo. *Oxon.* 1723. *Darling's Cyclo. Bibliog.*]

4. The Several Heterodox Hypotheses, concerning both the Persons and the Attributes of the Godhead, justly chargeable with more Inconsistencies and Absurdities than those which have been groundlessly Imputed to the Catholick System. A Sermon preach'd at the Visitation of the Right Reverend Father in God Lancelot, Lord Bishop of Exeter, now Lord Archbishop of York, held in the Church of *St. Andrew* in *Plymouth*, on Friday, August the 28th 1724. By *William Stephens*, M.A. Vicar of that Church. . . .

Oxford: Printed by *L. Lichfield*, for *S. Wilmot*, Bookseller; and Sold by *J. Knapton*, *R. Knaplock*, *W.* and *J. Innys*, in *St. Paul's Church-yard*, and *J. Roberts*, in *Warwick-Lane*, London, 1725.

8vo. Title and Dedication, 4 leaves; Sermon, pp. 35, Text, Col. ii. 8. [Plymouth Free Library.]

5. Sermons on several subjects. By *William Stephens* M.A. Sometime Fellow of *Exeter College* in *Oxford*, and late Vicar of *St. Andrew's* in *Plymouth*. Vol. I. [In Two Volumes.]

OXFORD, Printed at the THEATER, MDCCXXXVII.

8vo. Vol. I. Title, 1 leaf; Dedication by the widow *Gertrude Stephens* to the Bishop of *Exeter*, and the Dean and Chapter of *Exeter*, dated Dec. 10. 1736, 1 leaf; Contents, 2 leaves; The Names of the Subscribers, 23 leaves; Half-Title, 1 leaf; pp. 430; followed by a list of publications "By the same Author," 1 leaf. Vol. II. Title, 1 leaf; Dedication, &c., 3 leaves; pp. 455. [Bod.]

"He was nam'd by You to his Fellowship in *Exeter College*. He was presented by You to his first Preferment in the Church. And the Credit deriv'd to him from the Favours You were pleas'd to confer on him, was one of those many Considerations, which induc'd the Worthy Corporation of the Town of *Plymouth* to elect him their Vicar." (*Ded.* in Vol. I.)

A list of the texts of the sermons in these volumes will be found in *Darling's Cyclopaedia Bibliographica*.

LIST OF MEMBERS.

* Indicates Life Members.

† Indicates Honorary Members.

‡ Indicates Corresponding Members.

Italics indicate Members whose addresses are incomplete or unknown.

The Names of Members of the Council are printed in small capitals.

Notice of Changes of Residence and of Decease of Members should be sent to the
General Secretary, Rev. W. Harpley, Clayhanger Rectory, Tiverton.

Year of
Election.

1879***ACLAND**, Sir H. W. D., K.C.B., M.A., M.D., LL.D., F.R.S., F.R.G.S.,
Broad Street, Oxford.

1880 Acland, Rev. Preb., M.A., Broadclyst, Exeter.

1888 Ackland, J. M., M.R.C.S., Southernhay, Exeter.

1885 Adams, C. G., 2, Adelaide Terrace, Ilfracomba.

1872†**Adams**, John Couch, M.A., D.C.L., F.R.S., F.R.A.S., Director of
Observatory and Lowndean Professor of Astronomy and
Geometry in the University of Cambridge, The Obser-
vatory, Cambridge.

1881 Adams, Col. H. C., Lion House, Exmouth.

1887 Adkins, George, M.R.C.S., Yealmpton, near Plymouth.

1887 Adkins, J. E., M.R.C.S., Yealmpton, near Plymouth.

1886 **ALDRIDGE**, C., M.D., Plympton House, Plympton.

1889 **ALFORD**, Rev. D. P., M.A., Vicarage, Tavistock (VICE-
PRESIDENT).

1887 Alger, W. H., The Manor House, Stoke Dameral, S. Devon.

1884 Alsop, J., 17, Devon Square, Newton Abbot.

1874 Alsop, R., Teignmouth Bank, Teignmouth.

1877 Amery, Jasper, 35, Bitton Street, Teignmouth.

1869 **AMERY**, J. S., Druid, Ashburton.

1869 **AMERY**, P. F. S., Druid, Ashburton.

1875***ANDREW**, T., F.G.S., Southernhay, Exeter.

1877 Andrews, R., Modbury.

1863 Appleton, Edward, F.R.I.B.A., 1, Vaughan Parade, Torquay.

1870 Arnold, G., Dolton.

1868 Ashley, J., Honiton.

1882 Atkins, E., Dun Esk, Teignmouth.

1888 Bachelor, R. S., The Parade, Plymouth.

1889 Badcock, Rev. L. T., Tavistock (VICE-PRESIDENT).

1884 Baker, R. H. M., Roseneath, Newton Abbot.

1886 Bamford, Rev. R., M.A., Gordon Villa, St. Marychurch.

1871 Bangham, Joseph, Torrington.

- 1878 BARING-GOULD, Rev. S., M.A., Lew Trenchard, Lewdown
(VICE-PRESIDENT).
- 1862 Barnes, Rev. Preb., M.A., 190, Earl's Court Road, London, N.W.
- 1879 Barnett, C. G., Ilfracombe.
- 1884 Barry, J., Lower St. Paul's Road, Newton Abbot.
- 1877 Bartlet, Rev. J. M., Manor House, Ludbrooke, Modbury,
Ivybridge.
- 1883* Bartlett, O. Smart, Paignton.
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- 1889 Batchelor, Rev. J. T., Jacobstow, Cornwall.
- 1872 Bate, James J. R., Bampton Street, Tiverton.
- 1889 Bawdon, M., Tamar View, Tavistock.
- 1866 Bayly, John, Seven Trees, Plymouth.
- 1871* Bayly, Robert, Torr Grove, Plymouth.
- 1884 Bearne, Lewis, St. Bernard's, Newton Abbot.
- 1876 Beatty, W., Buckfastleigh.
- 1875 Bennett, C., 5, Victoria Terrace, Mount Radford, Exeter.
- 1889 Bennett, Rev. H. J., Rectory, Lydford, North Devon.
- 1882 Berry, W. B., Union Road, Crediton.
- 1876 Bickford, J., Bank, Ashburton.
- 1880 Birch, Rev. W. M., M.A., Vicarage, Ashburton.
- 1879 Birkmyer, J., 13, Lower Terrace, Mount Radford, Exeter.
- 1889 Birmingham Free Library.
- 1886 BLACKLER, T. A., St. Marychurch.
- 1878 Blackmore, Rev. R., M.A., Probus, Cornwall.
- 1873 Bowring, L. B., C.S.I., Lavrockbeare, Torquay.
- 1874 Bowring, Lady, 7, Baring Crescent, Exeter.
- 1872 Brent, F., F.S.A., Tothill Avenue, Plymouth.
- 1872 Bridges, W. T., D.C.L., Torwood, Torquay.
- 1870 Briggs, T. R. A., F.L.S., Fursdon, Egg Buckland, Plymouth.
- 1882 BROWNLOW, The Very Rev. Canon, M.A., Cecil Street, Plymouth.
- 1888 Browne-Mason, J. T., 6, Southernhay, Exeter.
- 1882 BRUSHFIELD, T. N., M.D., The Cliff, Budleigh Salterton.
- 1889 Brushfield, Archibald, The Cliff, Budleigh Salterton.
- 1881* Bryant, Wilberforce, Stoke Park, Bucks.
- 1879* Bryce, J. P., J.P., Bystock, Exmouth.
- 1872 Buckingham, W., 12, Southernhay, Exeter.
- 1889 Buckland, Rev. S., M.A., Great Torrington.
- 1887 Budd, F. N., Batworthy, Chagford, Newton Abbot.
- 1887 Buller, Admiral A., C.B., Erle Hall, Plympton.
- 1889 Buller, Miss E., Pound, Horrabridge, South Devon.
- 1887 Bulteel, Thomas, Radford, Plymouth.
- 1871 Burch, Arthur, 5, Baring Crescent, Exeter.
- 1873* Burdett-Coutts, Right Hon. Baroness, 1, Stratton Street,
Piccadilly, London.
- 1887 BURNARD, R., Hillsborough, Plymouth.
- 1887 Burnard, Mrs. F. L., Hillsborough, Plymouth.
- 1888 Bush, Dr., 6, Gloucester Terrace, Hyde Park, London. W.

- 1879 Butcher, L. G., Manor House, Ilfracombe.
 1889 Butt, F. W., The Brake, Yelverton, R.S.O.
- 1866* Carpenter-Garnier, J., Rookesbury Park, Wickham, Hants.
 1886 Carter, James, Southlands, Heavitree, Exeter.
 1880 Carter, S. S., Noland Park, South Brent, Ivybridge.
 1888 Cartwright, Miss Anson, Hevers, Heavitree, Exeter.
 1886 CHANTER, J. R., Fort Hill, Barnstaple (VICE-PRESIDENT ELECT).
 1889 Chapell, R. H., Bedford Square, Tavistock.
 1882* Chaplin, G. H., Elmfield, Crediton.
 1884 Chapman, H. M., St. Martin's Priory, Canterbury.
 1881 CHAPMAN, Rev. Professor, M.A., Western College, Mannamead, Plymouth.
 1889 Chichester, W. H., J.P., Grenofen, Tavistock (VICE-PRESIDENT).
 1888 Clark, H., Carlton House, Exmouth.
 1869* Clark, R. A., The Larches, Torquay.
 1871 Clements, Rev. H. G. J., M.A., Vicarage, Sidmouth.
 1881* Clifford, Right Hon. Lord, Ugbrooke, Chudleigh.
 1868* COLERIDGE, Right Hon. Lord, M.A., 1, Sussex Square, London.
 1866 COLLIER, W. F., J.P., Woodtown, Horrabridge (VICE-PRESIDENT).
 1889 Collier, M., Foxhams, Horrabridge.
 1880 Cornish-Bowden, F. J., Blackhall, Ivybridge, S. Devon.
 1881* Cornish, Rev. J. F., Christ's Hospital, London, E.C.
 1867 COTTON, R. W., Woodleigh, Newton Abbot.
 1866 COTTON, W., F.S.A., The Close, Exeter.
 1885 COWIE, Very Rev. B., Dean of Exeter, Deanery, Exeter (VICE-PRESIDENT).
 1887 Cox, Rev. J. Mercer, M.A., St. Mary's Vicarage, Plympton.
 1887 Crews, F. H. E., 1, Stafford Terrace, Plymouth.
 1877 Crimp, W. A., Kingsbridge.
 1880 Croft, C. W., 3, Beaumont Villas, Plymouth.
 1881 Crossing, W., Splatton, South Brent, Devon.
 1887* Cubitt, W., J.P., Fallapit, Mounts, R.S.O., South Devon.
 1886 Cumming, Stephen A., Devonian, Golden Manor, Hanwell, London, W.
- 1888 DALLAS, J., F.L.S., Museum, Exeter.
 1887 Daubeny, Giles Andrew, Lutton House, Brent, South Devon.
 1889 David, Rev. W. H., M.A., Kelly College, Tavistock (VICE-PRESIDENT).
 1888 Davies, A. B., Parkham, Bideford.
 1878 Davson, F. A., M.D., Westbourn, Dartmouth.
 1878 Davy, A. J., Fleet Street, Torquay.
 1886 Daw, W. Bennett, Hele House, Ashburton.
 1889 Daw, J. J., Tavistock.
 1888 Daw, Joshua, Fore Street, Exeter.
 1888 Dawson, Hon. Richard, Holne Park, Ashburton.

- 1879 Dennis, J. C., Ilfracombe.
 1867 Doe, G., Castle Street, Great Torrington.
 1882 Doe, G. M., Castle Street, Great Torrington.
 1888 Domville, E. J., Southernhay, Exeter.
 1888 Downes, Harold, 5, Royal Park Road, Clifton, Bristol.
 1880 Drake, Sir W. R., 12, Prince's Gardens, South Kensington, London.
 1878 DREDGE, Rev. J. Ingle, Buckland Brewer, Bideford.
 1884 Dryden, Mrs., Westhill Lodge, Budleigh Salterton.
 1877 Dumbleton, Rev. E. N., M.A., St. James's Rectory, Exeter.
 1889 Duncan, A. G., South Bank, Bideford.
 1879 DYMOND, A. H., Castle Chambers, Exeter.
 1871 Dymond, F. W., 3, Manston Terrace, Exeter.
 1889 Dymond, Mrs., St. Leonard's Road, Exeter.
 1877 Eady, Mrs., Combe Royal, Kingsbridge.
 1877 Elliot, J., Tresillian, Kingsbridge.
 1877 Elliot, R. L., Tresillian, Kingsbridge.
 1888 Ellis, W. H., J.P., F.G.S., F.R. Met. Soc., Hartwell House, Exeter.
 1878 ELWORTHY, F. T., Foxdown, Wellington, Somerset.
 1888 Ermen, Miss, Yannon, Teignmouth.
 1869*EVANS, J., D.C.L., LL.D., F.R.S., F.S.A., F.G.S., Nash Mills, Hemel Hempstead, Herts.
 1877 Evans, J. L., Moreton House, Tyndall's Park, Bristol.
 1880*Evans, Parker N., 23, Pembroke Road, Clifton, Bristol.
 1886 Evans, J. J. Ogilvie, 1, Orchard Gardens, Teignmouth.
 1864 Finch, T., M.D., F.R.A.S., Westville, St. Marychurch, Torquay.
 1875 Firth, F. H., Cater Court, Ashburton.
 1873 Fisher, Edward, Abbotsbury, Newton Abbot.
 1875 Fisher, G., High Street, Torrington.
 1876 Fleming, J., Bigadon, Buckfastleigh.
 1887 Forbes, David, M.D., Redcliffe, Exmouth.
 1867 Fortescue, Right Hon. Earl, Castle Hill, Southmolton.
 1867*Foster, Rev. J. P., M.A., Oxenhall Vicarage, Newent, Gloucestershire.
 1876 Fouracre, J. T., 21, South Devon Place, Plymouth.
 1876*Fowler, Rev. W. W., Repton, Burton-on-Trent.
 1876*Fox, Charles, 28, Glosshouse Street, Regent Street, London, W.
 1887 Fox, G., Kingsbridge.
 1880 French, Rev. W., Middle School, Tiverton.
 1874†Froude, J. A., M.A., 5, Onslow Gardens, London.
 1876 Fulford, F. D., J.P., Fulford, Dunsford.
 1883 Fulford, R. M., A.B.I.B.A., Faircombe, Barnfield, Exeter.
 1880 Furneaux, J., Hill Crest, Buckfastleigh.
 1888 Gadd, H., 255, David's Hill, Exeter.
 1872 Galton, J. C., M.A., F.L.S., New University Club, St. James's Street, London, S.W.

- 1881 Garland, T. G. T., 2, Stafford Villas, Heavitree, Exeter.
 1876*Gaye, Henry S., M.D., 4, Courtenay Terrace, Newton Abbot.
 1872*Geare, J. G., Exeter.
 1871*GERVIS, W. S., M.D., F.G.S., Ashburton (VICE-PRESIDENT).
 1886 Gibbons, Miss, Wallingford, Budleigh Salterton.
 1889 Gibson, H. A., D. & C. Bank, Tavistock.
 1865 GILL, H. S., J.P., Tiverton.
 1889 Gill, Reg. B. E., J.P., Tavistock (VICE-PRESIDENT).
 1881 Gill, W., Sunnyside, Ford Terrace, Tavistock.
 1877*GLYDE, E. E., F.R.Met.Soc., Kirkham, Babbacombe, Torquay.
 1884 Goddard, Edwin, Trevanion, Wolborough Hill, Newton Abbot.
 1868*Goldsmid, Sir Julian, Bart., M.A., 105, Piccadilly, London, W.
 1889 GREENFIELD, T. W., Tavistock (HON. LOCAL SECRETARY.)
 1878 Gregory, A., D. & C. Bank, Newton Abbot.
 1871 Gregory, A. T., *Gazette Office*, Tiverton.
 1875 Groser, A., North Hill Villa, Plymouth.
 1875 Guille, Rev. G. de Cartaret, Rectory, Little Torrington.
 1874 Gulson, J. R., 17, Sussex Place, Regent's Park, London, N.W.
 1873*Guyer, J. B., F.C.S., Wrentham, Torquay.

 1880 Hacker, S., Newton Abbot.
 1867*Hall, Townsend M., F.G.S., Pilton, Barnstaple.
 1873*Halliday, W. H., M.A., J.P., Glenthorn, Lynmouth, Barnstaple.
 1862 Hamilton, A. H. A., M.A., Fairfield Lodge, Exeter.
 1889 HAMLING, J. B., The Close, Barnstaple (HON. LOCAL SECRETARY ELECT.)
 1880 Hamlyn, James, Bossell Park, Buckfastleigh.
 1880 Hamlyn, John, Toll Marsh, Buckfastleigh.
 1880 Hamlyn, Joseph, Bilber Hill, Buckfastleigh.
 1878 Hamlyn, W. B., 4, Abbey Crescent, Torquay.
 1873*Hanbury, S., Bishopstowe, Torquay.
 1868 Harper, J., L.R.C.P., Bear Street, Barnstaple.
 1874 Harpley, R. B., Church Street, West Hartlepool.
 1862 HARPLEY, Rev. W., M.A., F.O.P.S., Clayhanger Rectory, Tiverton (HON. GENERAL SECRETARY).
 1889 Harris, C., Endsleigh Terrace, Tavistock.
 1887 Harris, J., Gas Works, Plympton.
 1877 HARRIS, Rev. S. G., M.A., Highweek, Newton Abbot.
 1889 Harvey, C., Upland Villa, Tavistock.
 1875*Hatt-Cook, Herbert, Hartford Hall, Cheshire.
 1889 Haverfield, T. W., Clifton Villa, Tavistock.
 1869*Hayne, C. Seale, M.P., Kinswear Castle, Dartmouth.
 1886 Hayward, Rev. D. LL, B.A., Burrow Lodge, Ilfracombe.
 1865 Header, W., Rocombe, Torquay.
 1883 Hearder, H. Pollington, M.P.S., 24, Westwell Street, Plymouth.
 1868*Heberden, Rev. W., M.A., 14, Gloucester Place, Portman Square, London.
 1875 Hedgeland, Rev. Preb., M.A., Penzance.

- 1888 Hepburn, T. H., Hele, Cullompton.
 1880 Hewetson, T., Ware, Staverton, Buckfastleigh.
 1882*Hiern, W. P., Castle House, Barnstaple.
 1872 Hill, J., J.P., Pitt House, Moretonhampstead, Exeter.
 1862 HINE, J., F.R.I.B.A., 7, Mulgrave Place, Plymouth.
 1888 Hobson, Rev. Canon, The Presbytery, Exeter.
 1872 Hooper, B., Bournbrook, Torquay.
 1877 Hooper, J., Bellfield, Kingsbridge.
 1879 Hooper, S., Reed House, Hatherleigh.
 1888 Hope, Rev. W., M.A., 3, Park Villas, Polsloe Road, Exeter.
 1882 Howell, J. B., The Grange, Bow, N. Devon.
 1889*HUDLESTON, W. H., M.A., F.R.S., F.G.S., &c., Oatlands Park, Weybridge (PRESIDENT).
 1886 Hughan, W. J., Grosvenor House, Torquay.
 1868*HUNT, A. R., M.A., F.G.S., F.L.S., Southwood, Torquay.
 1878 Hunton, T., B.A., Bronshill, Torquay.
 1876 Hurrell, J. S., The Manor House, Kingsbridge.
 1888 Hussey, T. W., Rougemont Hotel, Exeter.
 1888 Hutchings, Capt. H., Estella, Budleigh Salterton.
 1873 Hutchings, Rev. H., M.A., The Clintons, Teignmouth.
 1868 HUTCHINSON, P. O., Sidmouth.
 1886 Huxtable, James, New Street, Torrington.
 1877*Ilbert, W. Roope, M.A., J.P., Bowringsleigh, Kingsbridge.
 1888 Jerman, J. C. S., Bedford Circus, Exeter.
 1889 JOHNSTONE, Mrs. J. D., Bedford Place, Tavistock.
 1862*JONES, WINSLOW, Imperial Hotel, Exmouth.
 1883 Jordan, W. F. C., 4, Brimley Villas, Teignmouth.
 1871 JORDAN, W. R. H., Bitten Street, Teignmouth.
 1874 Karkeek, P. Q., Isca, Abbey Road, Torquay.
 1880*Keeling, F., F.R.G.S., St. Mary's Terrace, Colchester.
 1879*Kelland, W. H., Victoria Road, Barnstaple.
 1877*Kellock, T. C., Totnes.
 1872*Kennaway, Sir J. H., Bart., M.A., M.P., Escot, Ottery St. Mary.
 1880 King, C. R. B., A.R.I.B.A., 35, Oakley Square, London, N.W.
 1889 Kingdon, Rev. H. T. G., B.A., Tavistock.
 1865*Kitson, W. H., Shiphay, Torquay.
 1886 Kitson, R. P., Collaton, Torquay.
 1880 Knight, S., F.R.I.B.A., The Temple Chambers, Temple Avenue, London, E.C.
 1884 Knowles, W., 11, Barrington Road, Brixton, S.W.
 1889 Knowles, Miss, 2, Park Hill Villas, Highweek, Newton Abbot.
 1871 LAKE, W. C., M.D., F.R. Met. Soc., 38, Bitten Street, Teignmouth.
 1887 Lamoureux, G. H., Boringdon Villas, Plympton.
 1882 Lancaster, E. S., 1, Windsor Villas, Plymouth.

- 1888 Lancey, E., Teneriffa, Exmouth.
 1881 LANE, JOHN, F.C.A., 2, Bannercross, Abbey Road, Torquay.
 1873 Lavers, W., Upton Leigh, Torre, Torquay.
 1871 Lee, Godfrey Robert, Timaru Cottage, Teignmouth.
 1889 Lee, Lieut.-Col., J. W., Budleigh Salterton, South Devon.
 1889 Lemnon, M. T., Bedford Villas, Tavistock.
 1878 Lewis, J., Torre Cottage, Torquay.
 1880 Lilly, Rev. P., Collaton Vicarage, Paignton.
 1883 Lipscomb, R. H., Syon House, East Budleigh.
 1882 Little, J., Mount Radford, Crescent, Exeter.
 1871*LONDON, The Right Rev. the Lord Bishop of, Fulham Palace.
 1885*Lowe, George S. S., 1, Collingwood Villas, Stoke, Devonport.
 1877 Luskey, J. S., West Alvington, Kingsbridge.
 1869 Luttrell, G. F., Dunster Castle, Somerset.
 1863*Lyte, F. Maxwell, F.C.S., 60, Finborough Road, Radcliffe Square. S.W.

 1886*MacAndrew, James J., J.P., F.L.S., Lukealand, Ivybridge.
 1889 MacArthur, General, Brooklands, Tavistock.
 1888 Macan, H., St. Leonard's Road, Exeter.
 1877*Mallock, R., M.P., Cockington Court, Torquay.
 1889 Marshall, E., Parkwood, Tavistock.
 1881 Marshall, H. W., M.A., Reed Vale, Teignmouth.
 1885 Marshall-Hall, Capt., J.P., F.G.S., F.C.S., St. John's, Bovey Tracey.
 1889 Marten, H. B., 7, Endsleigh Place, Tavistock.
 1871*MARTIN, JOHN MAY, C.E., F.M.S., Bradninch House, Exeter.
 1887 Martin, T., Alston, Plympton.
 1889 Mathews, W. W., Park View, Tavistock.
 1887 Matthews, Coryndon, F.E.S., Erme Wood, Ivybridge.
 1883 MERIVALE, Very Rev. C., D.D., D.C.L., Dean of Ely, The Deanery, Ely.
 1867*Merrifield, J., LL.D., F.R.A.S., Hobart Terrace, Plymouth.
 1885 Merrington, J. H., The Castle, Seaton.
 1880 Michelmores, H., Compass House, Stoke Hill, Exeter.
 1889 Middleton, W., School of Art, Tavistock.
 1884*Mildmay, H. B., Flete, Ivybridge.
 1889 Mitchell, A., Rose Villa, Tavistock.
 1870 Mogg, W., 9, Brunswick Place, Stoke, Devonport.
 1885 Morley, The Right Hon. the Earl of, Saltram, Plympton.
 1889 MORSHEAD, R., Camplehay, Tavistock (HON. LOCAL TREASURER).
 1888 Mortimer, J., Sidwell Street, Exeter.
 1886*Mortimer, A., 1, Paper Buildings, Temple, London.
 1874*Mount Edgcumbe, Right Hon. Earl of, Mount Edgcumbe, Devonport.
 1888 Mozley, Rev. Arthur, M.A., Plymtree Rectory, Cullompton.

 1881*Nankivell, C. A., M.D., Ashley Lodge, Torquay.

- 1885 Neck, J. S., Great House, Moretonhampstead.
 1884*Ness, Mrs. H., Daracombe House, Highweek, Newton Abbot.
 1887 Newbury, Samuel P., Boringdon Villas, Plympton.
 1889 Northey, G. W., West Street, Tavistock.
 1889 Nosworthy, S., Glanville Road, Tavistock.

 1862 ORMEROD, G. W., M.A., F.G.S., ETC., Woodway, Teignmouth.
 1888 Ormerod, Miss, 33, West Southernhay, Exeter.

 1872 Paige-Brown, J. B., M.A., Great Inglebourne, Harberton,
 South Devon.
 1869*Pannell, C.
 1862 PARFITT, EDWARD, Devon and Exeter Institution, Exeter.
 1887 Parker, Admiral, Delamore, Ivybridge.
 1872 Parker, C. E., 13, Scarborough Terrace, Torquay.
 1884 Parker, Rev. J. A., The Presbytery, Teignmouth.
 1885 Parkin, Paxton W., 6, Major Terrace, Seaton.
 1877 Pearce, F. D., Brook House, Kingsbridge.
 1888 Pearson, J., Redgate, Exmouth.
 1872*Peek, Sir H. W., Bart., M.P., Rousden, Lyme, Dorset.
 1862 PENGELLY, W., F.R.S., F.G.S., &c., Lamorna, Torquay.
 1887 Penhale, John H., Higher Meddon Street, Bideford.
 1887 Penhale, William, Castle Street, Barnstaple.
 1888 Pennell, G. B., Heavitree, Exeter.
 1882 Penzance Library.
 1888 Perkin, E. S., 20, Sidwall Street, Exeter.
 1872 Pershouse, F., jun., Mohun House, Newton Road, Torquay.
 1883 Petherick, J., Ordsall, Torquay.
 1881 PHEAR, Sir J. B., M.A., F.G.S., J.P., Marpool, Exmouth.
 1887 PHILLIPS, J., Moor Park, Newton Abbot.
 1887 Phillips, Sidney, Houndiscombe Place, Plymouth.
 1888 Pigott, Rev. E. C., Polsloe Road, Exeter.
 1879 Plymouth Free Library.
 1884 Plymouth Proprietary Library, Cornwall Street, Plymouth.
 1880 Pode, J. D., Slade, Ivybridge.
 1862 Pollard, W., M.R.C.S., Southland House, Torquay.
 1886 Poole, Rev. G., The Presbytery, Torquay.
 1882 Pope, W., Coplestone House, Coplestone, North Devon.
 1878*Powell, W., M.B., F.R.C.S., Hill Garden, Torquay.
 1876 Powning, Rev. J., B.D., Dart View, Totnes.
 1879 Price, Right Rev. Bishop, M.A., Horne Villa, Ilfracombe.
 1888 Prickman, J. D., Okehampton.
 1888 Prideaux, E., M.D., Luson, Wellington, Somerset.
 1874 Proctor, W., Elmhurst, Torquay.
 1867 Prowse, A. P., Yennadon, Horrabridge.
 1887 PROWSE, ARTHUR B., M.D., F.R.C.S., 5, Lansdown Place, Clifton.
 1878 Pulliblack, Rev. J., M.A., 5, Church Road, Walton-on-the-
 Hill, Liverpool.

- 1884 Pulling, F. S., M.A., 18, Addison Road, Bedford Park, London, W.
- 1862 Pycroft, G., M.R.C.S., 2, Camborne Terrace, Richmond, Surrey.
- 1881***RADFORD**, D., J.P., Mount Tavy, Tavistock (**VICE-PRESIDENT**).
- 1869**Radford, I. C.*
- 1868***Radford**, W. T., M.B., F.R.A.S., Sidmount, Sidmouth.
- 1876 **Radford**, Rev. W. T. A., Down St. Mary Rectory, Bow, North Devon.
- 1888 **RADFORD**, Mrs., Chiswick House, Ditton Hill, Surbiton.
- 1889 **Radford**, C. H., West Axtown, Yelverton, R.S.O.
- 1873***Rathbone**, T., M.A., Backwood, Neston, Cheshire.
- 1877 **Rayer**, W. C., J.P., Holcombe Court, Wellington, Somerset.
- 1887 **Reade**, R. C., M.A., 5, Woodland Grove, Torquay.
- 1872 **Reichel**, Rev. Oswald J., B.C.L., Sparsholt, Wantage, Berks.
- 1885 **Reichel**, L. H., Black Torrington, Highampton.
- 1887 **Richards**, Rev. G. B., Somercotes, Plympton.
- 1888 **Richards**, J., Summerlands, Exeter.
- 1889 **Richards**, S., Brook Street, Tavistock.
- 1885 **Richardson**, Rev. P. J., M.A., Vicarage, Seaton.
- 1888 **Roberts**, C. T. K., 36, St. Leonard's Road, Exeter.
- 1877***Roberts**, I., F.G.S., Kennessee, Maghull, Lancashire.
- 1884 **Robinson**, J. F., Park Hill, Ipplepen, Newton Abbot.
- 1867 **Rock**, W. F., Hyde Cliff, Wellington Grove, Blackheath (**VICE-PRESIDENT ELECT**).
- 1870 **Rolston**, G. T., M.R.C.S., 8, Osborne Villas, Stoke, Devonport.
- 1878 **Rooker**, W. S., Bideford.
- 1872 **Rossall**, J. H., M.A., Rock House, Torquay.
- 1865 **Row**, W. N., J.P., Cove, Tiverton.
- 1862 **Rowe**, J. **BROOKING**, F.S.A., F.L.S., Castle Barbican, Plympton.
- 1866 **Russell**, Lord Arthur J. E., 2, Audley Square, London (**VICE-PRESIDENT**).
- 1869***Ryder**, J. W. W., J.P., 4, Tamar Terrace, Stoke, Devonport.
- 1888 **Rylands-Chanter**, J. J., Exmouth.
- 1888***Sanders**, C. J. B., 26, Gandy Street, Exeter.
- 1888 **Sanders**, Rev. Lloyd, M.A., Rectory, Wimple, Exeter.
- 1869 **Sanford**, W. A., F.G.S., Nynhead Court, Wellington, Somerset.
- 1881***Saunders**, E. Symes, Devon County Asylum, Exminster.
- 1877***Saunders**, J. Symes, M.B., Devon County Asylum, Exminster.
- 1887***Saunders**, Trelawney, Elmfield on the Knowles, Newton Abbot.
- 1880***Saunders**, W. S., Moor View Lodge, Pennsylvania, Exeter.
- 1881 **Savile**, Lieut.-Colonel, J.P., Barley House, Exeter.
- 1888 **Saxton**, Major-General, Emsleigh.
- 1876 **Scott**, T. A. **Sommers**, Reay Cottage, Reigate, Surrey.
- 1884 **Scratton**, D. R., D.L., J.P., Ogwell House, West Ogwell, Newton Abbot.

- 1882 Shelley, Sir John, Bart., Shobrooke Park, Crediton.
 1879 SHELLEY, J., 20, Princess Square, Plymouth.
 1881 SHIER, DAVID, M.D., 3, Claremont Terrace, Exmouth.
 1889 Shone, Rev. S. A., B.A., LL.D., Chaplain, H. M. Dockyard, Devonport.
 1885 Sibbald, J. G. E., Admiralty, Whitehall, London, S.W.
 1878 Slade, S. H., Richmond House, South Norwood Hill, South Norwood, London, S.E.
 1874 Smith, E., F.C.S., Hazelwood, Hennock, Bovey Tracey.
 1879 Smith, Rev. Preb., M.A., Crediton.
 1885 SOMERVAIL, A., 80, Fleet Street, Torquay.
 1884 Sparke, Morton, Rooklands, Torquay.
 1874**Spragge, F. P.*
 1882 SPRAGUE, F. S., Crediton.
 1889 Spencer, Rev. E., M.A., B. & L., Tavistock.
 1889 Sperling, H. M., Lew Trenchard, North Devon.
 1887 Stamp, N. D., M.D., Ridgeway, Plympton.
 1874 Standerwick, R., Chagford.
 1883 Stapledon, J. N., Lakenham, Westward Ho!
 1868 STEBBING, Rev. T. R. R., M.A., Ephraim Lodge, The Common, Tunbridge Wells, Kent.
 1872*Stewart-Savile, Rev. F. A., M.A., Leybourne Grange, Malling, Kent.
 1876*Stone, J., Leusdon Lodge, Ashburton.
 1875 Strangways, Rev. H. Fox, Silverton Rectory, Collumpton (VICE-PRESIDENT).
 1889 Straker, E., Post-office, Tavistock.
 1888 Stubbs, Rev. C. W., Stokenham Vicarage, Kingsbridge.
 1869 Studdy, H., Waddeton Court, Brixham.
 1875*Sullivan, Miss, Broom House, Fulham.
 1888 Swann, Captain, Seaton.
 1876 Tanner, E. Fearnley, Hawson Court, Buckfastleigh.
 1886 Taylor, Arthur Furneaux, Ingleside, Hanwell, London, W.
 1877 Taylor, H., M.D., Ellerton House, The Park, Nottingham.
 1889 Taylor, Rev. C. H., M.A., Vicarage, Milton Abbot, Tavistock.
 1881*Tebbitt, W., Brooks Hall, Ipswich.
 1877 Thomas, Henry Drew, Staplake Mount, Starcoos.
 1868 Thornton, Rev. W. H., B.A., North Bovey Rectory, Moreton-hampstead.
 1882 Tickell, Rev. H. du Maine, B.A., Dunsford Vicarage, Exeter.
 1889 Tomlinson, J., South View, Tavistock.
 1869*Tothill, W., Stoke Bishop, Bristol.
 1872 Tozer, Henry, Ashburton.
 1883 Treadwin, Mrs. Charlotte E., Cathedral Yard, Exeter.
 1887 Treby, General Phillipps, J.P., Goodamoor, Plympton.
 1876 Trehane, James, The Wanbro', St. Luke's Road, Torquay.
 1880 Trehane, John, St. David's Hill, Exeter.

- 1888 Trollope, T. A., Cliff Terrace, Budleigh Salterton.
 1889 Troup, J. Rose, Rockbeare Manor, near Exeter.
 1887 TROUP, Mrs., Rockbeare Manor, near Exeter.
 1876 TUCKER, R. C., Ashburton.
 1876 Tucker, Edwin, Ashburton.
 1888 Tucker, J. T., Barnfield Crescent, Exeter.
 1878 Tucker, W. Edward, Paignton.
 1872 Turnbull, Lieut.-Col. J. R., The Priory, Torquay.
 1877 Turner, Miss E., Combe Royal, Kingsbridge.
 1880 Turner, T., J.P., F.R.Met. Soc., Cullompton.

 1876 Ubsdell, H., Buckfastleigh.
 1887 Underhay, Mrs., Billacombe, Plymstock, near Plymouth.
 1875 USSHER, W. A. E., F.G.S., 28, Jermyn Street, London, S.W.

 1872 VARWELL, P., Melrose, Exeter.
 1881 Varwell, H. B., Melrose, Exeter.
 1889 Vaughan, Mrs., Victoria Terrace, Budleigh Salterton.
 1887 Venning, J. J. E., Stoke, Devonport.
 1884 VICARY, W., The Knoll, Newton Abbot.
 1862*Vicary, W., F.G.S., The Priory, Colleton Crescent, Exeter.
 1862 VIVIAN, E., M.A., Woodfield, Torquay (GENERAL TREASURER).
 1885 Voysey, Rev. Annesley M., The Grange, Merton, Beaford,
 North Devon.

 1881 Wade, C. J., J.P., 11, West Cliff, Dawlish.
 1880 Walker, W. H., Princess Place, Plymouth.
 1888 Wallis, A., F.R.S.L., Mount Vernon, Exeter.
 1888 Ward, A. E., East Southernhay, Exeter.
 1889 Ward, W. O., St. John's, Tavistock.
 1889 Ware, C. E., Iddeleigh, Heavitree Road, Exeter.
 1889*Watts, R. L., Devonport.
 1884 Watts, W. J., Forde House, Newton Abbot.
 1887 Webb, F. J., F.G.S., Lancashire.
 1864 Weeks, C., Warleigh, Tor Hill Road, Torquay.
 1870*Were, T. K. M.A., Cotlands, Sidmouth.
 1866*WYMOUTH, R. F., D.LIT., M.A., 33, Alfred Road, Acton,
 London, W.
 1877 Weymouth, T. W., Woolston House, Loddiswell, Kingsbridge.
 1878*Whidborne, Rev. G. F., M.A., F.G.S., Charante, Torquay.
 1881 Whidborne, J., Gorway, Teignmouth.
 1872†Whitaker, W., B.A., F.R.S., F.G.S., Geological Survey Office,
 28, Jermyn Street, London, S.W.; and 33, East Park
 Terrace, Southampton.
 1888 White, Admiral, C.B., Baring Crescent, Exeter.
 1864 White, J. T., 2, Waterloo Cottages, Torquay.
 1875 White-Thomson, Col., Broomford Manor, Exbourne, North
 Devon.

- 1870 Whitley, N., Penarth, Truro.
 1872 Wilcocks, H., Gipsy Hill, Pinhoe, Exeter.
 1889 Wilkey, Dean Terrace, Liskeard.
 1881* Wilcocks, F., M.D., M.R.C.P., 14, Mandeville Place, Manchester Square, London, W. [Teignmouth].
 1877* Wilcocks, Rev. E. J., M.A., The School House, Warrington, Lancashire [Teignmouth].
 1877* Wilcocks, G. W., M. INST. C.E., 34, Great George Street, Westminster [Teignmouth].
 1877* Wilcocks, R. H., LL.B., 34, Great George Street, Westminster [Teignmouth].
 1876* Wilcocks, W. K., M.A., 19, Old Square, Lincoln's Inn, London, W.C. [Teignmouth].
 1883* Wilcocks, A. D., M.R.C.S., 12, Orchard Gardens, Teignmouth.
 1871 Willett, J. S., Petticombe, Torrington.
 1887 Williams, Charles, Terridge, Plympton.
 1889 Williams, J. D., West Street, Tavistock.
 1888 Williams, Rev. P., Rewe.
 1871 Wills, Joseph, 13, Cowick Terrace, Church Street, St. Thomas, Exeter.
 1889 Wilson, Rev. E. C. C., B.A., Tavistock.
 1875* Wiltshire, Rev. T., M.A., F.G.S., F.L.S., F.R.A.S., Hon. Sec. Palaeontological and Ray Societies, 25, Granville Park, Lewisham, London, S.W.
 1875* WINDEATT, EDWARD, Totnes.
 1866 Windeatt, John, Woodland House, Plymouth.
 1872 Windeatt, T. W., Totnes.
 1872* Winwood, Rev. H. H., M.A., F.G.S., 11, Cavendish Crescent, Bath.
 1884* Wolfe, J. E., Arthington, Torquay.
 1878 Wolfe, Rev. Preb., M.A., Arthington, Torquay.
 1884 Wollen, Grant, Glengariffe, Torquay.
 1884* WOODHOUSE, H. B. S., 10, Portland Square, Plymouth.
 1887 Woolcombe, Rev. G. Ley, Rectory, St. Mewan, St. Austell.
 1886 WOOLLOOMBE, W. J., Plympton.
 1872 WORTH, R. N., F.G.S., 4, Seaton Avenue, Plymouth.
 1870 Wren, Adderley, B., Lenwood, Bideford.
 1886 Wright, Lieut.-Col. C. I., Watcombe Park, St. Marychurch.
 1876 Wright, W. H. K., 31, Headland Park, Plymouth.
 1888 Wyatt-Edgall, Cowley House, Exeter.

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Corresponding Members	.	.	.	.	1
Life Members	.	.	.	.	89
Annual Members	.	.	.	.	387
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ERRATA AND CORRIGENDA.

- Page 153, line 10 from bottom, for "Withycombe, East Budleigh," read "Widcombe in the Moor."
- „ 189 „ 17, for "the" read "per."
- „ 198 „ 3, for "ecclesia" read "ecclesie."
- „ 200 „ 10, for "1668" read "1688."
- „ 322 „ 23, for "in the river Otter" read "in the Valley of the Otter"
- „ 377 „ 8, for "Rev. P. Creswell" read "Rev. R. Creswell."
- „ 429 „ 22, for "if case" read "in case."
- „ 447 „ 11, dele one "at."
- „ 450, within bracket, near bottom, for "*Fasnian*" read "*Frasnian*."
- „ 525, line 21, for "Born in Devon" read "Born at Christow, Devon."
- „ 529 „ 13 from bottom, for "Kermisng" read "Kemsing."
- „ 531 „ 5, for "Crofton" read "Cofton."
- „ 542 „ 12, for "Batchelat" read "Batchelor."
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THE ANNUAL MEETING IN 1890.

THE ANNUAL MEETING AT BARNSTAPLE

WILL COMMENCE

ON TUESDAY, JULY 29TH, 1890.

68642



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